DOCUMENT RESUME

ED 340 467 PS 020 083

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TITLE Strengthening Parental Contributions to School Readiness and Early School Learning.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Jul 91
NOTE 81p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Academic Achievement; Child Development; Child Rearing; Early Childhood Education; Educational Policy; Expectation; *Learning Readiness; *Parent Attitudes; Parent Child Relationship; Parent Influence; Parent Materials; *Parent Role; *Parent School Relationship; Public Policy; Research Needs; *School Readiness; *Success
IDENTIFIERS *America 2000; National Issues; Quality Time

ABSTRACT

Research pertaining to implementation of the U.S. first national education goal calling for parents to prepare their children for school success is reviewed and synthesized. The report is organized to inform the design of a public awareness initiative aimed primarily at parents. It reviews research in an effort to guide decisions about the content and methods of efforts to strengthen parents' contributions to their children's early success in school. Four major questions are addressed: (1) To what extent do parent practices and beliefs in the early years contribute to children's success in school? (2) What specific parent practices and beliefs are related to school readiness and success in the child's early years? (3) To what extent are desired parent practices carried out by parents, and how do parents view the task of preparing their child for school? (4) Are printed materials likely to be effective in strengthening parents' understanding of the development of their child's school-related abilities? Implications for practice identified include: (1) targeting initiatives in the early years of parenting; (2) increasing the amount of quality time spent with young children; and (3) incorporating an appreciation of the cultural and socioeconomic bases of parent behavior and beliefs into programs aimed at parents. Directions for research are also suggested. Contains approximately 165 references. (LB)

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STRENGTHENING PARENTAL CONTRIBUTIONS TO SCHOOL READINESS AND EARLY SCHOOL LEARNING

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Executive Summary

STRENGTHENING PARENTAL CONTRIBUTIONS TO SCHOOL READINESS AND EARLY SCHOOL LEARNING

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Purpose and Scope

This paper provides a review and synthesis of research pertaining to implementation of the National Goal for Education calling for parents to prepare their children for school success. It has been organized to inform the design of a public awareness initiative aimed primarily at parents, and examines research regarding four major questions as set forth below.

To what extent do parent practices and beliefs in the early years contribute to children's success in school?

There is compelling longitudinal research evidence that mothers' child-rearing practices and beliefs during the early years of a child's life are related to the child's subsequent performance in school. The early years of parenting (birth through kindergarten) are an appropriate target of initiatives designed to improve children's school success.

What specific parent and practices beliefs in the child's early years are related to school readiness and success?

Parent behaviors and attitudes are inextricably interwoven in daily exchanges between parent and child, and one parent factor cannot be identified as more important than others. Research points to the following constellation of parent beliefs and practices as especially critical to fostering children's school-related abilities:

-- a view of human development as a complex process involving the child as an active contributor to development;

-- realistic, in-depth understandings of the child's abilities and interests;

-- asking children questions that stimulate thinking and promote verbal problem-solving (e.g. anticipate an outcome), and avoiding closed-ended questions and didactic recitation;

-- matching parental influence techniques (teaching style) to situational demands and the child's developmental level;

-- recognizing and strengthening literacy experiences that occur within routine family interactions in the home and community;

-- making reading and writing materials accessible, limiting television viewing time, and visiting libraries and museums;

-- reading to children in a manner that actively involves the child through responses to parent questions about pictures and story figures;

-- encouraging the child's active manipulation of a variety of stimulating objects; and

-- a parenting style of responsiveness, flexibility, warm concern, emotional displays of positive affect, and acceptance of the child's ideas, interests and feelings.

Children's early school experiences need to be viewed as a dynamic process involving child, family, school, and community influences. Parents are not entirely responsible for either success or failure of their children's school performance.

To what extent are desired parent practices carried out by parents, and how do parents view the task of preparing their child for school?

Recent valid information on the quantity and nature of parent-child interaction presently is not available on representative populations. Time-use studies indicate that, in general, parents and preschool children are engaged in a relatively small amount of time that could be considered instructional. There also are reports of parents placing high levels of achievement expectations and experiences on young children.

Concepts of school readiness are not uniform, and appear to be influenced and vary by community norms and characteristics. Socioeconomic differences have been found in how parents prepare their children for school. Research indicates parents tend to emphasize a smaller set of school readiness skills than do teachers.

Are printed materials likely to be effective in strengthening parents' understanding of and behaviors related to developing their child's school-related abilities?

Printed materials that are keyed to parents' interests and disseminated on a regular basis may be useful in increasing parents' awareness of their contribution to school-related abilities, but are unlikely to produce significant change and to reach parents of lower socioeconomic status as a stand-alone intervention. Existing research indicates the magnitude of program effects is greater when programs aimed at parents are intensive.

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I. INTRODUCTION

This paper provides a review and synthesis of research pertaining to implementation of the National Goal for Education calling for parents to prepare their children for school success. It has been organized to inform the design of a public awareness initiative aimed primarily at parents, organized by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education. Toward this end, the paper reviews research in an effort to guide decisions about the content and methods of efforts to strengthen parents' contributions to their children's early success in school. Specifically, the paper examines research pertaining to the following major questions:

- To what extent do parent practices and beliefs in the early years contribute to children's success in school?
- What specific parent practices and beliefs in the child's early years are related to school readiness and success?
- To what extent are desired parent practices carried out by parents, and how do parents view the task of preparing their child for school?
- Are printed materials likely to be effective in strengthening parents' understanding of and behaviors related to developing their child's school-related abilities?

A. The Readiness Construct

The term readiness has special importance in a paper focused on school readiness and early school success. Moreover, the readiness construct is increasingly an element of policies and practices regarding kindergarten and first grade entry and curriculum. A variant of the term also appears in the National Goals for Education language ("ready to learn"). Thus, a brief examination of the term's meaning and use is in order.

In the world of practice, the term readiness has numerous meanings and uses. The most marked definitional difference is whether readiness is viewed as a maturational process governed by a biological timetable, or as a product of forces in the child's environment (Kagan, 1990). Kindergarten teachers' beliefs about readiness, for example, have been found to differ along the maturationist versus environmentalist dimension (Smith & Shepard, 1988). The readiness construct is used increasingly as an indicator of a child's level of preparedness for success in kindergarten or first grade. Tests of school readiness are employed in growing numbers of schools to aid decisions about educational placement and retention, a practice which has been strongly criticized by major professional associations (National Association for the Education of Young Children, 1990) and leading scholars (Meisels, 1984; 1987).

Conventional definitions of readiness imply it is a child characteristic, yet variations in the meaning and uses of the term suggest that readiness is a situationally specific construct (Eisenhart & Graue, 1990). The growing range of variability in the expectations and curricula of kindergartens in the U.S. (Walsh, 1989; Shepard & Smith, 1989) make the identification of universal readiness criteria a problematic task. Striking differences between schools and school districts in the numbers of children who were overage for their grade placement (Shepard, Graue, & Catto, 1989) led Graue and her associates to examine parent and teacher ideas about readiness. The results point to differences across communities in the definitions and importance of readiness, and the fallacy of viewing readiness as a fixed entity within the child (Eisenhart & Graue, 1990; Graue, in press).

In the world of research, readiness has been examined primarily as a child's current skill achievement and performance. One line of research has investigated the predictive validity of readiness tests (Graue & Shepard,

1989; Meisels, 1984, 1987). Results generally indicate that most tests lack predictive validity; they describe the characteristics of children but are not reliable predictors of future outcomes. Findings also show that readiness tests are especially ineffective in predicting the school-related abilities of children from low-income and ethnic minority populations (Gandara, Keogh, & Yoshoika-Maxwell, 1980; Oakland, 1978).

At the core of the school readiness construct is an assumption that a set of skills and dispositions enable a child to benefit from the experiences offered by schools. Clearly, learning begins well before children enter school. Children are intrinsically motivated or ready to learn from the time they are born (White, 1959). In the first five years of life, children experience monumental growth and development, including language acquisition, communication skill, motor development, and an array of cognitive and social competencies. The social and physical environments in which children are reared play a critical role in strengthening children's natural dispositions to learn. The critical question is how to ensure that young children enter school ready to succeed (NAEYC, 1990). Because school achievement patterns tend to remain highly consistent across an individual's educational career, early experiences in school seem especially important to understand because of their long-term consequences. Yet little research exists on the processes associated with early achievement (Entwisle & Hayduk, 1982; Pallas, Entwisle, Alexander, & Cadigan, 1987).

The child's level of cognitive skill at the point of school entry has been found to be highly predictive of subsequent school achievement. In a longitudinal sample of children from families who were somewhat above average in terms of parental education and children's intellectual level, cognitive skills assessed prior to kindergarten entry were found to be strongly correlated with performance in the first three grades of elementary school

(Stevenson, Parker, Wilkinson, Hegion, & Fish, 1976) and with achievement in mathematics and reading in fifth and tenth grade (Stevenson & Newman, 1986). The most consistent prekindergarten predictors of math achievement were verbal recall, visual-auditory association, perceptual learning, and coding; the prekindergarten cognitive measures predictive of subsequent reading achievement were naming letters, visual-auditory association, detecting reversals in sequences of letters, and category naming. A study of 1,539 ethnic minority children found that cognitive skills at the time of kindergarten entrance had pervasive indirect effects on first-grade reading and mathematics achievement scores and on socioemotional maturity (Reynolds, 1989). Cognitive skills, which were measured by the Iowa Tests of Basic Skills, influenced first-grade outcomes indirectly through kindergarten variables, especially end-of-kindergarten achievement and teacher assessments of student achievement motivation.

Factors associated with personal maturity also have been found to be associated with early success in school. Personal maturity was predictive of exceptionally large gains in verbal competence among first-grade children in a diverse, representative urban sample (Pallas et al., 1987). Higher ratings of personal maturity also distinguished children with little academic ability who were promoted to second grade from other children of comparable ability who were retained in grade (Cadigan, Entwisle, Alexander, & Pallas, 1988). The maturity scale included such items as being enthusiastic and being able to concentrate. Personal maturity may contribute directly to achievement by enabling children to attend to classroom tasks; restless children who are unable to concentrate are likely to be distracted from lessons and other instructional activities. Further, teachers may react positively to psychological traits of maturity (Pallas et al., 1987).

While home environments contribute significantly to the development of skills that are predictive of children's early school success, parents are not entirely responsible for either success or failure of children's early school experiences. One of the long-standing issues in early education is who should get ready, the child or the school? (Hymes, 1968). Studies of academic failure have tended to shift the blame back and forth between home and school (Snow, Barnes, Chandler, Goodman, & Hemphill, 1991), with some scholars suggesting that mismatches between home and school cultures are the major cause of children's academic problems. A child's ability to successfully accommodate school expectations and tasks is affected by an interrelated set of child, family, school, and community influences. Impaired health and poor nutrition have detrimental effects on school achievement (Klerman, 1988), financial and psychological stresses within the family are negatively associated with literacy skills (Snow et al., 1991), and a range of classroom and other school resources and practices impinge on children's academic performance (Goodlad, 1984). Especially important are community support systems that enhance family capacities for effectively rearing young children (Kagan, Powell, Weissbourd, & Zigler, 1987).

Recognition of the need for a broad approach to improving children's early school experiences is found in the National Goals for Education. Specifically, the first goal calls for the following:

> Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.

The first goal also recognizes the importance of community support systems for families with young children by proposing that high quality preschool programs be available for disadvantaged and disabled children, and by calling for adequate nutrition and health care, including prenatal care to reduce the number of low birthweight babies.

B. Organization and Scope of Paper

Parent practices and beliefs associated with school readiness and early school success are identified and examined in Section II. The review is limited to studies which investigated parent variables at some point in the early years of child rearing (birth to age 6). Because of the National Goal for Education focus on parental practices prior to school entry, studies which assessed parent variables during the child's elementary school years (beyond kindergarten) have been excluded from this review. The present synthesis differs, then, from existing reviews of the research literature on parental contributions school achievement (e.g. Hess & Holloway, 1984; Marjoribanks, 1979) by limiting the parameters to early parenting rather than generalizing school-age parental influences to the preschool period.

The review encompasses a range of child outcomes related to or indicative of school achievement: cognitive or intellectual skills, problem-solving abilities (including reasoning and prediction skills), academic self-image, personal maturity, verbal skill, reading readiness and ability, standardized achievement tests, and school marks. The review is limited primarily to studies which assessed school readiness and school-related abilities at 4, 5, or 6 years of age. Hence, most of the research included in this paper is longitudinal in design.

In Section III, research is reviewed regarding parents' existing practices with children (e.g. amount of interaction time) and views of school readiness. Attention also is given to strategies for reaching parents with information about their contributions to children's school-related abilities.

Section IV sets forth implications for practice and suggests needed directions in research.

II. EARLY PARENT INFLUENCES ON SCHOOL READINESS AND ACHIEVEMENT

This section reviews research literature on the ways in which parents' behaviors and attitudes in the early years (prior to school entry) are related to children's school readiness and subsequent school achievement. Studies providing a global assessment of parent contributions to school-related outcomes are examined first, followed by a review of research pertaining to the following five specific domains of parental influence: parental beliefs and knowledge about child development and abilities; achievement expectations; parent-child verbal exchanges; control and discipline strategies; and the affective relationship between parent and child.

While the existing literature is generally informative, research on relationships between parent variables and child outcomes has a number of methodological and conceptual limitations. Four warrant special mention. One serious problem is the tendency for relationships between parental behavior and child outcomes to be confounded by distal variables, especially socioeconomic status and intelligence. The design or statistical analyses of many studies fail to acknowledge these influences. Yet a spurious correlation may occur if a genetic or environmental link between parent and child contributes to an observed relationship. With regard to socioeconomic status, for example, Laosa (1982) found a negative correlation between maternal modeling and children's intellectual development at age 3, but a positive relationship between these two variables when holding social class constant. Fortunately, a few studies have attempted to account for the potential effect of maternal or child IQ and socioeconomic status in examining parental effects on children (e.g. Hess, Holloway, Dickson, & Price, 1984).

A second problem is the persistent issue of causality in parent-child relations, especially in correlational studies. Research sensitivity to child effects on parental behavior and attitudes has increased since Bell and Harper's (1977) influential analysis of child-to-parent models of behavior, yet an assumption of parent-to-child directionality prevails in many studies.

A third limitation is generalizability. Parental behaviors and beliefs need to be understood within their socioecological context. Socioeconomic status long has been identified as a major influence on parenting beliefs and practices (Kohn, 1959, 1977), and outcomes found in one population will not necessarily be realized in other populations (Laosa, 1990; Powell & Sigel, in press). The limits of generalizability of research data apply to ethnic groups as well; increasingly it is important to consider within-group differences in populations broadly defined by origin such as Mexican (e.g. Powell, Zambrana, & Silva-Palacios, 1990) or Native American (e.g. Strom & Hill, 1979).

Lastly, the comparability of findings across studies of parental contributions to school-related outcomes often is limited due to differences in how variables are defined and/or measured. Parents' teaching style, for instance, can represent a didactic versus nondidactic continuum in one study and a verbal versus nonverbal dimension in another.

A. Global Assessments of Parental Contributions

A logical starting point for examining parental contributions to initial school performance is to address the question of whether parents' child-rearing practices and beliefs during the early years of a child's life are

related to the child's subsequent performance in school. Longitudinal studies provide an affirmative response to this question.

Research by Hess and his colleagues at Stanford University -- referred to as the Stanford study in this review -- examined parental socialization of school readiness and achievement in the United States and Japan (Hess et al., 1984). Findings for the U.S. sample are summarized in this review. The initial U.S. sample involved 67 white, native-born mothers from a range of socioeconomic backgrounds and their 4-year-olds, recruited through preschools and child care centers; all children were first-born. The follow-up study involved 47 of the original 67 families when children were in sixth grade (12 years of age).

Measures of maternal behavior and attitudes during the preschool period were found to be strong predictors of the child's school readiness at ages 5 and 6, and with school achievement at age 12. Maternal variables were more strongly associated with school readiness than with achievement at age 12. Much of the variance in age 12 school achievement was explained by performance on school readiness, although the affective tone of mother-child interaction during the preschool years added significantly to the prediction of school achievement scores at age 12. Hence, maternal actions during the preschool period may affect school achievement indirectly by giving the child a cognitive boost in school-related tasks that is maintained in elementary school. Maternal measures were much stronger predictors of child outcomes than socioeconomic status, and statistical analyses indicate the correlation between maternal variables and school achievement is not a function of maternal IQ.

Maternal measures included the following: aspirations and expectations for achievement, strategies for controlling the child's behavior, maternal

teaching style, communication efficiency and style, affective tone of interaction between mother and child, and attributions about child success and failure in school. School readiness was assessed with several tests of school-relevant skills (e.g. letter and number recognition), including subtests of the Metropolitan Readiness Test. A composite measure of school achievement at 12 years of age was comprised of the vocabulary and mathematics subtests of the Iowa Tests of Basic Skills.

The quality of the home environment during the first two years of life also has been found to correlate with school achievement in first grade (Bradley & Caldwell, 1984). In a longitudinal study involving 37 families who were mostly African-American and primarily of low socioeconomic status, children's home environments at 12 months and at 24 months of age were positively correlated with reading, language, and mathematics scores from the SRA Achievement Test battery at first grade. These results are consistent with earlier findings of a strong relation between aspects of infants' home environments and their intellectual and language development during the preschool years (Bradley & Caldwell, 1976; Elardo, Bradley, & Caldwell, 1975). They also are consistent with findings of a retrospective study of a different low-income sample where positive correlations were found between 12-month HOME scores and school achievement 5 to 9 years later (Van Doorninck, Caldwell, Wright, & Frankenburg, 1981).

In the Bradley and Caldwell research, the home environment was measured with the Home Observation for Measurement of the Environment (HOME) scale, which has been used extensively in studies of family environment and children's early cognitive development (e.g. Ramey, Mills, Campbell, & O'Brien, 1975; Siegel, 1981). The HOME scale was designed to measure parental support of early cognitive and social-emotional development, and has

six subscales: emotional and verbal responsivity of mother, avoidance of restriction and punishment, organization of physical and temporal environment, provision of appropriate play materials, maternal involvement with the child, and opportunities for variety in daily stimulation.

In the first grade follow-up study, the provision of appropriate play materials subscale at 12 months was the strongest predictor among the six subscales of first-grade achievement; correlations between play materials and achievement ranged from .58 for reading to .44 for mathematics (Bradley & Caldwell, 1984). All but two (maternal responsivity and organization of the environment) of the six HOME subscales at 24 months were moderately correlated with first-grade achievement (.4 to .5).

These findings are consistent with earlier research on the effects of maternal behavior on children's school readiness and subsequent achievement in school (e.g. Hess & Shipman, 1965; Hess et al., 1968, 1969), and with investigations showing links between early parenting practices and children's intellectual development (Bee et al., 1982).

Two related questions are prompted by longitudinal findings which provide strong evidence of a relationship between aspects of parenting in the early years and subsequent school readiness and academic achievement: Are early experiences in the home more important than later home influences on school performance? Which parent variables are most important in predicting children's experiences in school?

Existing studies are limited in answering the first question. Relationships between early home experiences and subsequent school performance may reflect a strong correlation between early home environments and later home environments (McCall, 1981). Parents who are supportive of their children in the early years are likely to be supportive during the school years. At the

same time, the relative influence of the family may decrease with the child's age as school and peer influences assume greater importance in the child's life. In a study of first grade children, for example, parent variables such reading stories to the child and expectations for child achievement were not predictive of exceptionally large gains in verbal competence (Pallas et al., 1987). Interestingly, Hess and his associates found that the association of maternal behavior with children's school-relevant performance increased between preschool and follow-up periods in Japan but declined in the U.S. (Hess, Azuma, Kashiwagi, & Holloway, 1987). The primary influence of early home experiences may be on the development of cognitive and social skills that enable the child to successfully negotiate school environments, with early school success contributing to subsequent achievement (Hess et al., 1984; Bradley & Caldwell, 1984).

The question of which parent variables are the most important influences on children's early school experiences cannot be answered. In addition to methodological constraints (see Hess & Holloway, 1984), investigators have discovered that parental behaviors and attitudes are inextricably interwoven in routine, daily exchanges between parent and child, and therefore it is impossible to identify one parent factor as the most significant influence on children. In the Stanford study, for example, no single variable clearly dominated the others in predicting school readiness and achievement (Hess et al., 1984). Similarly, Bee et al. (1982) were unable to identify a "silver bullet" in the impact of maternal behavior on children's development.

The effects of specific environmental influences on children's performance and development appear to be age specific (Wachs & Gruen, 1982). Certain types of environmental inputs may be more critical to specific domains of development at one age than at another age. In the Bradley and Caldwell

longitudinal study, for instance, the relationship between maternal responsivity and child cognitive outcomes lessened as the child increased in age (Bradley & Caldwell, 1976, 1984; Elardo et al., 1975).

In the past decade, research regarding parents' effects on children's cognitive development has moved toward greater specificity in an effort to examine links between particular kinds of parent variables and particular domains of children's knowledge and skills (Clarke-Stewart, 1988). This research strategy is in contrast with the practice of considering the overall home environment, or a range of parenting practices, in relation to overall indices of child functioning. Five categories of parent variables are examined in the remainder of this section on parental contributions to children's early school experiences.

Summary

There is compelling longitudinal research evidence that mothers' child-rearing practices and beliefs during the early years of a child's life are related to the child's subsequent performance in school. A variety of maternal variables has been found to predict school readiness and achievement in elementary school grades, including achievement expectations, strategies for controlling the child, teaching style, affective tone of mother-child interaction, verbal responsivity of the mother, provision of appropriate play materials, and opportunities for variety in daily stimulation. Parental behaviors and attitudes are inextricably interwoven in routine, daily exchanges between parent and child, and thus researchers have been unable to identify one parent factor as the most significant influence on children.

B. Parental Beliefs and Knowledge about Child Development and Ability

A promising area of investigation in parent-child interaction is what parents think about developmental processes in general and the abilities of their children in particular. Until recently, there has been a tendency in research to give minimal attention to the complexities of parental functioning. Developmental psychologists have gone to great lengths to understand children's cognitive processes, for instance, but typically attribute little cognitive functioning to parents. Many studies seem to imply that parents are simplistic black box reactors (see Parke, 1978). Yet recent data indicate that parents are far from being blank slates. Parents hold a variety of beliefs about children and parenting that have direct and multiple implications for the ways in which educational interventions are designed for parents.

Beliefs about Child Development

One of the reasons for the growing interest in parental beliefs is that beliefs are assumed to affect parental behavior which in turn influences child outcomes. What parents think about child development may provide a target or point of entry for interventions aimed at sustaining or altering certain types of parent practices. Studies show that parents' beliefs generally coincide with major theories of child development (Goodnow, 1984). There is a tendency for parents to view development as a maturational process (biologically-driven), environmentally-controlled, or a dynamic interaction of child and environment (constructivist perspective).

Existing research indicates there is a relationship between parental beliefs about child development and parental behavior, and that belief-

behavior relations take a form generally predicted by theory (e.g. parents adhering to social learning orientations use demonstration as a teaching technique). However, the strength of the relationship is modest and clouded by exceptions and qualifications, including parent gender differences (McGillicuddy-DeLisi, 1982a, 1982b, 1985; Hess, Kashiwagi, Azuma, Price, & Dickson, 1980; for a review, see Miller, 1988). The absence of a one-to-one correspondence between belief and behavior is not surprising if one assumes situational factors also influence the ways parents interact with their children. As discussed in a subsequent section, there is evidence to indicate that parent behavior varies by the nature of a problem-solving task confronted by the child.

The transmission of parental beliefs to children does not always occur via parental behavior. As Miller (1988) notes, not all important parental behavior may be expressed in direct interaction with the child that is easily captured in discrete, observable behaviors. Some beliefs may be communicated to the child through a cumulative history of interactions. For instance, a child may realize the parent values curiosity and exploration, even though no single parental behavior sufficiently conveys this message. Thus, measures of parental beliefs may be more predictive of child outcomes than measures of parental behavior.

Two studies have examined the link between parents' beliefs about development and children's intellectual functioning using normal families with a child 3 to 6 years of age. Results of both investigations indicate there are significant yet modest relations between parental beliefs about child development and children's intellectual competence (Johnson & Martin, 1983; McGillicuddy-DeLisi, 1985). These findings remain when there are statistical controls for potentially confounding demographic variables such as socioeconomic status.

Child cognitive outcomes have been found to be positively associated with parental beliefs that emphasize a constructivist perspective on development: development is viewed as a complex process that involves the child as an active contributor to his or her own development. In one study, children's performance on simple reading and arithmetic tests at ages 5 and 6 was positively correlated with parental adherence to constructive beliefs, and negatively correlated with parental beliefs in maturational processes (Johnson & Martin, 1983). In another study, the performance of 3- and 4-year-olds on seven tasks designed to assess a range of cognitive abilities (e.g. categorization, interpersonal problem-solving) was positively correlated with parental beliefs emphasizing a constructive view of child development (McGillicuddy-DeLisi, 1985).

Knowledge of Child Ability

The preceding discussion has focused on parental beliefs about developmental processes in general. I turn now to parental knowledge of their child's abilities. The central question here is whether parents' knowledge of their child's abilities is related to child outcomes.

Research on this topic stems primarily from an interest in "the problem of the match" (Hunt, 1961) between the developing child and his or her environment. In a revision of Piaget's (1960) theory of equilibration, Hunt (1961, 1966) proposed that psychological development approaches its maximal rate when the child regularly encounters situations which offer information that is sufficiently discrepant from what he or she has already mastered. Parents who know their child's abilities and interests are less likely to create environments that are either "boring undermatches or distressing overmatches" (Hunt & Paraskevopoulos, 1980, p. 285). An assumption of many

parent education programs is that parental understanding of child abilities leads to appropriate parental interactions with the child, including teaching behaviors.

Parental understandings of child abilities typically are assessed by comparing parents' predictions about child performance on cognitive tasks to actual child performance in a traditional testing situation. Parents' predictions are deemed accurate if they agree with the child's actual performance in the testing situation; parental predictions that anticipate more or less ability to the child are considered to be overestimations and underestimations, respectively. Accuracy, then, is based on the presumed superiority of child responses in a traditional testing situation.

Several studies indicate that parents are only moderately accurate in predicting how their preschool child will perform on tests assessing cognitive abilities. In item-by-item predictions of intellectual performance, correct predictions have been found to range from about 70% (Hunt & Paraskevopoulos, 1980; Miller, 1986) to chance level (Sattler, Feldman, & Bohanan, 1985). In the Hunt and Paraskevopoulos investigation, mothers of 3- to 5-year-olds were asked to simulate their children's responses on 96 items taken from three tests of intellectual development while their children responded to the same items in another room (Hunt & Paraskevopoulos, 1980). Miller (1986) asked mothers of first graders to make item-by-item predictions of how their child would respond to a set of IQ items and Piagetian tasks. In the Sattler et al. (1985) study, parents predicted their preschool child's performance on items from the Peabody Picture Vocabulary Test. The latter study found no differences between mothers and fathers regarding accuracy (a finding confirmed by Miller et al., 1991 for parents of school-age children).

Research evidence indicates that children's intellectual performance is better when mothers hold accurate judgments about their child's intellectual

abilities. Hunt and Paraskevopoulos found an impressive correlation of -.80 between children's intellectual development and the number of false predictions of the children's performances by their respective mother. The larger the number of false predictions made by a mother, the fewer the number of test items on which the child performed correctly. In the Miller (1986) study, maternal accuracy was correlated .49 with the child's performance on IQ items and .85 with the child's performance on Piagetian items. While not all studies have produced similar results (Sattler et al., 1985), the general pattern of links between parental accuracy and intellectually competent children is consistent with the findings of other investigations involving preschool children (Cotler and Shoemaker, 1969), a reanalysis of approximated Hunt and Paraskevopoulos data (Price & Gillingham, 1985), and research involving school-age children (Miller, Manhal, & Mee, 1991).

When parents err in predicting child test performance, the tendency is to overestimate what their child can do (Hunt & Paraskevopoulos, 1980; Miller, 1[illegible]). Overestimation of child ability appears to be part of a larger pattern among adults (Miller, White, & Delgado, 1980) as well as parents regarding the prediction of children's academic performance (Entwisle & Hayduk, 1978) and views of children's social behaviors (Dix, Ruble, Grusec, & Nixon, 1986). Studies of parents' beliefs about the abilities of children in general also point to overestimation (for a review, see Miller, 1988).

The above conclusions are consistent with the findings of research on parents of handicapped or retarded children. Studies of the accuracy of parents' knowledge of their child's developmental status have been carried out with parents of children with special needs primarily to determine whether parents are reliable informants in identifying children in need of special services (e.g. Diamond, 1987). Findings point to correlations between

parental accuracy and child performance similar in magnitude to those found in studies with nonhandicapped populations (see Miller, 1988). There also is a tendency toward parental overestimation of child ability, but less so than with parents of nonhandicapped children.

Whether parental overestimation or underestimation of a child's abilities is worse for the child remains unclear. Hunt and Paraskevopoulos (1980) found mothers' overestimations had a strong negative correlation (-.77) with children's intellectual ability while underestimations had a negligible correlation (zero). They argued that overestimations lead to parents "pushing" their children and generally interfere with the provision of experiences that appropriately foster their child's developmental advancement. However, a reanalysis of these data using approximated figures and a different method for determining maternal accuracy resulted in a weaker negative correlation between overestimation and child performance (-.28) and a negative correlation between underestimation and child performance (-.37). Inaccuracy, then, stemming from either overestimation or underestimation was associated with diminished intellectual development (Price & Gillingham, 1985).

Most likely it is wrong to assume that parents' accuracy in predicting their children's performance on cognitive tests is indicative of parents' general knowledge about their child. Measures used in the studies reviewed here require parents to make predictions of child performance on tasks that are largely unfamiliar to the parent, thereby providing a highly stringent test of parental knowledge (Miller et al., 1991). Moreover, children's performance may not be fully assessed in an unfamiliar testing arrangement where a relative stranger asks a series of questions of the child (see Powell & Sigel, in press). Parents and testers approach the child from different perspectives and with qualitatively different relationships with the child.

The measures of parental accuracy may be better described as indicators of congruence between parent and psychological tester regarding child performance.

Summary

Two types of parents' beliefs -- about child development in general and about their children's abilities in particular -- have been found to be linked to school-related abilities. Mothers' and fathers' beliefs about how children develop and grow have been found to be significantly yet modestly related to children's intellectual competence. Children's cognitive skills have been found to be positively associated with parental views of development as a complex process that involves the child as an active contributor to his or her own development. With regard to parental understandings of children's abilities, research indicates that children's intellectual performance is better when mothers hold accurate judgments about their child's intellectual abilities. Presumably mothers' provide a more appropriate "match" between environment and level of child competence. Whether parental overestimation or underestimation of a child's abilities is worse for the child remains unclear.

C. Achievement Expectations

The family socialization process by which children develop attitudes related to academic achievement long has been an active area of investigation (e.g., Kahl, 1953). Studies have established that parents' expectations appear to be both a cause and an effect of academic achievement and children's academic self-image (for reviews, see Marjoribanks, 1979; Seginer, 1983;

Stipek, 1983). The vast majority of research on parents' educational expectations for their children has dealt with older children. Only one major study (Entwisle & Hayduk, 1978) has been carried out with young children (first and second grade). Fortunately, the investigation is a detailed analysis involving a diverse sample and a longitudinal design.

The aim of the Entwisle and Hayduk (1978) study was to examine the course of development of children's academic self-images from the time children begin first grade. A series of questions about academic expectations were investigated over a two-year period, using three cohorts of children and their parents from a white middle-class suburban school and a racially integrated (60% African-American), urban working-class school (see also Entwisle, Alexander, Pallas, & Cadigan, 1987).

Several findings of the Entwisle and Hayduk study contradict long-held assumptions or speculations about the nature of children's intellectual expectations. One assumption is that children from ethnic minority populations and less privileged backgrounds hold negative academic self-views at the point of school entry, and therefore begin school already discouraged about the prospects of doing well. Entwisle and Hayduk found that children, whether white and middle-class or African-American and relatively poor, held initially high expectations. Middle-class children's expectations were only slightly too high in relation to actual grades and performance on standardized tests, while working-class children's expectations were much too high. Further, working-class children did not modify their expectations over the year despite low grades given by their teachers.

A second assumption contradicted by the Entwisle and Hayduk data is that children's academic expectations are well established early in their school careers. Entwisle and Hadyuk found that children's academic expectations were

not well determined by and during first grade. Crystallization of achievement expectations may not occur until second or third grade or even later, perhaps because children are unsure of how they compare to other children until they have been repeatedly evaluated (see also Stipek, 1981).

Parents' initial expectations of their children's academic performance were lower than the expectations of their children; perhaps parents "played it safe." Middle-class parents' expectations were in notable agreement with the grades given by teachers on a child-by-child basis for reading, arithmetic, and conduct in both first and second grades. When middle-class parents' first-grade expectations did not match teachers' actual grades, parents tended to slightly underestimate how well a child would do. Working-class parents, however, tended to overestimate their children's performance in reading and arithmetic throughout the first grade. The expectations were not unduly high; working-class parents held lower reading and arithmetic expectations than did middle-class parents. The achievement expectations of working-class parents far exceeded their children's actual performance. Entwisle and Hayduk indicate that middle-class parents were much more involved with their children's school than working-class parents, and therefore may have been much more aware of school norms and the criteria used by teachers for assessing children.

When there were discrepancies between parents' expectations of children's academic performance and actual grades, there was a highly significant movement of grades both up and down that reduced the parents' prior expectation-grade discrepancy during first grade. The movement of grades toward consistency with parents' expectations appeared stronger than the movement toward consistency with the child's own expectations in first grade. Entwisle and Hayduk note, "Apparently children worked harder when their

parents expected more, and relaxed when their parends expected less" (p. 106). this pattern of parental influence was reduced in second grade, after parents had an opportunity to modify their expectations in light of their children's history of marks in first grade.

Gender differences were found in children's academic self-images. Boys' images reflected instrumental role concerns while girls' images reflected stereotypic sex-role notions. In forming their image of an academic self, boys depended more on self-evaluations than did girls, while girls depended more on parents' evaluations (Entwisle et al., 1987).

While it is inappropriate to generalize from one study involving children and parents from two schools, the existing data raise questions about the assumption that, prior to school entry, parents can foster a firm academic self-image in children that contributes to achievement success. The academic self-image of children appears to emerge gradually over first grade, and may not crystallize until later grades. Moreover, the achievement expectations held by most children in the first grade have no effect on actual performance. This does not suggest that parental expectations of children's academic achievement are unimportant in the early years, but the full effect of such expectations on children's academic self-images may not be realized until children are older. For example, a longitudinal study of a home-oriented preschool education program by Gotts (1989) found that parents' academic orientation regarding their children during the preschool years was a strong predictor of school-related outcomes in boys and girls in elementary and secondary school. Outcomes included school achievement, ability, marks, and personal organization. The measure of parents' academic orientation included expectations of children's academic performance, importance attached to the child doing well in school, minimum standards of academic performance, and level of satisfaction with the child's academic achievement performance.

Summary

Studies have established that parents' expectations appear to be both a cause and an effect of academic achievement and children's academic self-image. In the early years of school, children's academic self-images are in a process of development and do not appear to have any effect on actual achievement, at least in the first grade. While parental expectations seem to have some influence on first-grade achievement, it is unlikely that, prior to school entry, parents can help children form a stable academic self-image that reliably contributes to school achievement.

D. Parent-Child Verbal Exchanges

The quality of the verbal environment in which young children are reared has been shown to be associated with children's intellectual functioning and school achievement (e.g. Hess et al., 1984; Bradley & Caldwell, 1984). Two categories of verbal exchanges within family environments -- parental teaching strategies and the provision of literacy experiences -- are examined below.

Parental Teaching Strategies

Parents intentionally and unintentionally engage in a variety of teaching situations with their children on a daily basis. The question, then, is not whether a teaching function is part of the parental role, but whether certain types of teaching behaviors are more effective than others. Since the mid-1960s, researchers have investigated the correlates and consequences of parental teaching strategies, with attention to such parental influence

techniques as inquiry (asking the child a question), directives (a command to pursue a given course of action), praise, negative verbal feedback or disapproval, and modeling (Laosa, 1980b).

Theoretically, inquiry and other teaching methods that require the child to engage in verbal problem-solving have been deemed more beneficial to the development of a child's school-related abilities than didactic methods such as direct instruction. Sigel (1970, 1982) argues that strategies known as distancing behaviors place a cognitive demand on the child to separate the self mentally from the ongoing present (e.g. asking a child to anticipate an outcome versus the parent providing the "correct" answer). Distancing strategies are thought to foster a child's representational competence by stimulating the child to reconstruct past events, anticipate the future, or assume alternative perspectives on the present. Sigel points to three levels of distancing behaviors. A low-level strategy is closed-ended and didactic, offering the child few options or alternatives (e.g. "What is the name of this....?"). Level 2 strategies request the child to classify and/or relate disparate events or objects (e.g. classify a group of objects spread out on the table; make comparisons between different objects). Higher-level (Level 3) strategies ask the child to engage in causal inferences, to predict outcomes, and to employ hypothetical reasoning (e.g. create an object or plan an activity). Child-generated verbal responses (not didactic recitation) are an important element of theoretical perspectives emphasizing inquiry and other teaching strategies that place cognitive demands on the child (see Price, Hess, & Dickson, 1981).

In general, research indicates the most beneficial parental teaching strategies stimulate the child's own thinking and encourage active, verbal engagement of a task. The superiority of inquiry teaching methods has been found consistently in the past three decades of research on maternal teaching

style (Hess & Shipman, 1965; Hess et al., 1968, 1969). In a study of a block-sort task, for instance, a negative correlation was found between mothers' request for nonverbal block placement (rather than verbalization) and reading readiness scores and reading grades in the first two years of school.

In more recent research, Sigel's (1982) study of the effects of parents' use of distancing strategies with four-year-old children revealed a relationship between distancing behaviors (including inquiry) and children's general intelligence and problem-solving competence, including logical reasoning, transformation, and the ability to predict outcomes through imagery. The Sigel study is one of the few investigations of parental teaching strategies to include data on fathers. Findings indicate that mothers' teaching strategies were more influential than fathers' influence techniques; there were stronger associations between mothers' strategies and children's outcomes than fathers' strategies and children's outcomes. The sample consisted of nonworking mothers whose children were not enrolled in preschool, and hence the relative influence of the amount of time mothers spent with their children compared to fathers may account for this difference.

How might parental encouragement of young children's verbal expression contribute to children's subsequent performance on verbal-educational tasks? A common assumption is that global verbalization generally helps thinking. It is assumed that verbalization stimulates thought processes of children, enhancing performance on a variety of cognitive tasks not specific to the content of the verbalization (see Price, et al., 1981). An alternative perspective offered by Price et al. (1981) is that children's verbalization helps the memory of content; children can better remember information if they talk about it. Positive correlations between mothers' encouragement of verbalization and indices of school readiness (children's knowledge of letters

and numbers at ages 5 and 6) were found by Price et al. (1981), but nonsignificant relationships were found between encouragement of verbalization and children's scores on verbal and performance sections of an IQ test. Thus, the encouragement of child-generated verbal responses by mothers of preschool children improved the memory of specific information related to school readiness but did not relate to performance on a wide domain of cognitive tasks.

Findings of a subsequent study by Price (1984) suggest that content and pedagogy are conjoint influences on a preschool child's ability to perform a given task. Price found that preschool children remembered content better when mothers encouraged child-generated verbal responses that required retrieval of terms from long-term memory and when mothers made efforts to teach the specific content. The data suggest that the pedagogical effectiveness of mothers' encouragement of child-generated verbalizations is contingent upon emphasizing an informational domain or what Price calls curriculum selection.

An unresolved question here is why the practice of encouraging preschool children to generate verbal responses would contribute to enhanced memory of specific information. An assumption of the Price research is that maternal encouragement of child-generated verbalization is a form of external mnemonic support. The child's act of responding to an adult request for a verbal response is a rehearsal of information retrieved from the child's long-term memory (Price et al., 1981; Price, 1984). An alternative interpretation is that child-generated verbalizations enable the parent to be a more effective teacher because child-generated verbalizations enable the parent to learn more about how well a child understands a topic being taught (Price, 1984).

In spite of the positive associations between inquiry methods and children's school-related abilities, existing data do not support a simplistic

view of inquiry as always or consistently good and direct instruction or lower forms of inquiry as always or consistently bad. Effective parental teaching appears to involve appropriate use of inquiry or direct control strategies across and within situations and knowledge domains. Some teaching strategies are more conducive to certain types of tasks than to others. A striking result of Sigel's (1982) study is that parents' teaching strategies were task-dependent; parental behaviors varied by the nature of the problem-solving task (storytelling versus paper folding). It appeared that parents modified their teaching strategy in accordance with the particular demands of the situation. Sigel suggests that perhaps distancing techniques are a good way to stimulate a child to think about a story but demonstration is a more appropriate means to get a child to make a paper boat (see also McGillicuddy-DeLisi, 1982).

Further evidence of the apparent match between parental teaching strategy and knowledge domain is the finding that children's awareness and understanding of rules and conventions are associated with parents providing affective feedback (i.e. correcting children's mistakes; disapprovals) rather than engaging in direct instruction, reasoning, or inquiry approaches that stimulate the child's own thinking (Johnson & McGillicuddy-DeLisi, 1983). The rules and conventions pertained to such matters as the appropriateness of throwing blocks when a child has trouble building something, or taking someone else's bike without asking. Presumably this type of knowledge would be helpful to children in adjusting to the norms of classroom behavior.

It also may be beneficial to use an appropriate combination of different teaching strategies within a specific problem-solving task. In the Stanford study, children of mothers who used relatively few control techniques in either teaching or disciplinary situations did not perform better than

children of mothers who used a combination of direct and indirect control techniques. Exclusive use of indirect influence strategies does not appear to be more educationally effective. As Hess and McDevitt (1984) speculate, an effective child-rearing strategy may include a combination of direct techniques that draw attention to the desired behavior and indirect tactics that ensure the child engages in it (see Perry & Perry, 1983).

In addition to the nature of the task, the effectiveness of specific parental teaching strategies appears to be related to the child's developmental level. In a study of 50 families with a child approximately 3 years of age, Laosa (1982) found that maternal modeling -- the mother's use of physical demonstration as a teaching strategy -- had a positive association with the child's intellectual development as measured by the Preschool Inventory. Mothers' use of inquiry was not found to be associated with the child's intellectual development. Certain information-processing skills may be prerequisite to enabling the child to benefit intellectually from teaching strategies that involve inquiry. Younger children are equipped to learn through observation but may not have acquired the cognitive structures necessary for adequately processing, assimilating, or accommodating certain forms of discourse that involve inquiry. There also might be "sleeper" effects of inquiry methods that appear later in the child's development (Laosa, 1982). A study of middle-class, preschool children's problem-solving strategies within a mother-child dyad found that with an increase in child age there was less reliance on the mother and an increase in self-regulated problem-solving behavior. Mothers' communications appeared to fulfill different functions for children at different ages (Wertsch, McNamee, McLane, & Budwig, 1980).

The teaching strategies of both mothers and fathers have been found to vary by the child's communicative competence (Pellegrino, Brody, & Sigel,

1985). In a book-reading situation, parents used more low cognitive demand strategies (e.g. label, describe, demonstrate) with their communicative handicapped children than with non-communicative handicapped children. There also were fewer conversational turns in book reading by parents of communicative handicapped children compared to parents of non-communicative handicapped children. A large occurrence of conversational turns in parent-child interaction typically indicates that parents are actively eliciting children's utterances. In addition, parents paraphrased more for non-communicative handicapped children than for communicative handicapped children. Paraphrasing is a relatively advanced strategy often used as a reinforcer for children's appropriate responses. These data, then, suggest that parents use simple teaching strategies with less competent language users. Parents seem to adjust the complexity of the language addressed to children according to children's level of competence.

What is more, research findings suggest there may be beneficial effects of parents' adjusting their language complexity and teaching strategies in relation to children's level of competence. Parents' use of demanding cognitive strategies (e.g. evaluate, infer cause-effect, propose alternatives, transform) was not related to verbal IQ scores for all children in the Pellegrino et al. (1985) study. High-level strategies were related to children's verbal IQ for non-communicative handicapped children, but less demanding strategies related to verbal IQ for communicative handicapped children. These results provide partial support for the Vygotskiian idea that adults act as scaffolds for children in learning situations, becoming more demanding and less directive as children become more competent (see also Rogoff, 1989).

As suggested above, parental teaching strategies have been found to vary by socioeconomic status, culture and personal factors such as cognitive style (Hess, 1970; Deutsch, 1973; Laosa, 1980a). Level of formal education appears to be an especially critical factor, with higher levels of parental schooling associated with greater use of inquiry methods. An important investigation by Laosa (1980a) found that differences between Chicano and Anglo-American mothers' use of teaching strategies disappeared as the two cultural groups attained similar levels of formal education.

Early Literacy Environments

For the past four decades, researchers have established a link between parent-child interaction and young children's reading skills. An early study, for example, found that first-grade children with high reading abilities were surrounded by a richer verbal family environment (e.g. read to by "personally-important" adults) than children with lower reading abilities (Milner, 1951). Recently, investigators have pursued ethnographic studies of families and communities as literacy environments, especially in low-income settings (e.g. Heath, 1983; Teale, 1986), and have carried out quantitative analyses of specific family variables associated with various components of reading skill (e.g. Hess, Holloway, Price, & Dickson, 1982).

Parental contributions to children's reading skills are both indirect and direct. Among the indirect contributions, children who have access to reading and writing materials have been found to be more skilled readers than children who have limited access to such materials (Hansen, 1969; Milner, 1951; Hess et al., 1982). This includes the provision of such items as picture dictionaries and alphabet books as well as frequent trips to the library (Briggs & Elkind, 1977; Clark, 1976; Durkin, 1966). Parents' own reading habits are another indirect parental contribution to children's

reading. Parents of early readers have been found to read more than parents of children who were not early readers (Durkin, 1966; Clark, 1976). The amount of television watched by children (2 hours or less per day) and parental enforcement of television viewing rules have been found to be positively associated with kindergarten children's level of interest in literature (Morrow, 1983). There also is case study evidence to suggest that parents influence reading group placement at school by working at home to increase children's reading skill acquisition or motivation; reading group placement in turn affects reading achievement (Goldenberg, 1989).

The direct contributions of parents to children's reading proficiency center around the quantity and quality of parental reading to their children. Children's reading skill is correlated with the frequency of parents reading to their children (for a review, see Teale, 1984; Clark, 1976; Durkin, 1966; Briggs & Elkind, 1977; Morrow, 1983).

In many ways the "parents reading to children" variable is a composite indicator of verbal and nonverbal interaction between parent and child. Reading to young children is a complex event that involves many behaviors besides language comprehension (Teale, 1984). Mother-infant interaction during storybook reading, for instance, involves such maternal behaviors as variety in voice, whispers and coos, asking the child to identify objects in storybook pictures, describing storybook pictures, pauses for a child response, and whether the child is encouraged to hold and manage the book. Picture-book reading between mother and young child has been found to involve a set of routinized behaviors, made up of a small number of steps that follow a predictable sequence: establishing joint attention ("Look! What's that?"), eliciting a response ("What is that? What is that called?"), and evaluation ("That's right, it's a rabbit") (Ninio & Bruner, 1978; Ninio, 1980).

Research on the quality of verbal exchanges between parent and child during storyreading has identified salient elements of the process of reading to young children. Reading performance has been found to be correlated with, the number of questions asked and/or answered by the child, the number of pre- and post-story questions asked by the parent, and the amount of positive reinforcement given by the parent (Flood, 1977).

Reading aloud to children is believed to give them a sense of what reading is about, including the form and structure of written language (Teale, 1984) and an understanding of the relationship between spoken and written language (Hess & Holloway, 1984). Storybook reading also may socialize very young children to pedagogical practices often found in school (Heath, 1982; Hess & Holloway, 1984). As described above, typically parents ask children to label objects in pictures of books, and then provide feedback on the appropriateness of the children's response. This experience is akin to the sequences of initiation-reply-evaluation frequently used by teachers to elicit classroom conversations (Sinclair & Coulthard, 1975; Mehan, 1979).

Parental contributions to children's early literacy experiences are embedded within the routine social interactions of a family (Teale, 1986; Miller, Nemoianu, & DeJong, 1986; Leichter, 1984; Heath, 1983). In a study of low-income families, preschool children's literacy experiences typically occurred as part of the daily living routines of persons in their homes and communities (e.g. shopping, planning a wedding), and seldom as events isolated from some other on-going social process. In approximately 80% of the reading and writing activities observed and for almost 90% of all time spent in these activities, the focus of the activity (i.e. the motive for engaging in it) was not literacy itself (Teale, 1986). In another study, parental interest in literacy as expressed through spontaneous comments to children in naturalistic interaction has been found to be significantly related to knowledge of letters

at preschool age and to reading accuracy, reading comprehension, and word recognition at age 7 (Moon & Wells, 1979).

Cultural differences in early literacy experiences are demonstrated in Heath's ethnographic study of three communities in the Piedmont Carolinas (Heath, 1982, 1983). The research points to different responses of children to school because they have learned different methods and degrees of "taking from" books within their respective communities. The study's contrast involves families in middle-class white neighborhoods (Maintown), a working-class white community (Roadville), and a working-class African-American community (Trackton). Children in the latter two communities typically do not do well in school, even though their communities place a high value on education and are literate in the sense that residents are able to read printed and written materials in their daily lives; children from Trackton generally score in the lowest percentile range on the Metropolitan Reading Readiness tests.

Roadville parents persistently engaged their preschool children in conventional literacy experiences, including bedtime stories where parents asked questions requiring what-explanations. In contrast to Maintown families, the Roadville parents rarely extended either the content or the habits of literary events beyond bookreading (e.g. connect an item in the real world to a similar item in a book read with the child). For instance, mothers cooked without recipes most of the time, adults pursuing a task seldom provided a running verbal commentary on what they were doing, and children rarely were asked questions. Heath notes that Roadville parents did not link the ways of taking meaning from books to ways of relating that knowledge to other aspects of the environment. Roadville children tended to perform well in the first three early grades of school, where workbook assignments and

teachers' questions requiring what-explanations generally dominated. Serious difficulties were encountered when children reached later elementary grades. Questions about why and what-if (What would you have done if you had been Billy [a story's main character]?), creative writing assignments, and tasks requiring information learned from one source to be applied to another context generally stumped Roadville children.

The Trackton children in Heath's study were reared in the midst of constant verbal and nonverbal communication, but limited exposure to mainstream literacy events such as bedtime storybook reading. Adults did not focus their children's attention to specific elements of the environment, and referred to infants' cooing or babbling sounds as "noise," with no attempt to interpret these sounds as words or communicative efforts. Adults frequently asked children questions dealing with reason-explanations but seldom asked questions requiring what-explanations. In turn, Heath found the Trackton children to be skilled at answering "What's that like?" questions but typically unable to identify the specific features that make two objects or events alike. In school, Trackton children faced unfamiliar questions from teachers about what-explanations, and generally had difficulty adopting the social-interactional rules for school literacy events (e.g. sitting at their desks and completing reading workbook pages).

Heath's ethnographic portrayals point to discontinuities between home and school regarding the functions of literacy and language. Such discontinuities are frequently identified as major contributors to school failure (e.g. Laosa, 1981). Home-school discontinuity appears to be a convincing explanation of school failure for children whose cultural backgrounds are remarkably different from mainstream American culture. Caution must be used in extending the home-school discontinuity construct to all children with school achievement problems, however. For instance, data indicate that practices in

lower-income homes surrounding school-like tasks may not in fact differ in style from those experienced by the child in school (Chandler, Argyris, Barnes, Goodman, & Snow, 1986).

Summary

Research indicates the most beneficial parental teaching strategies are inquiry or distancing techniques that stimulate the child's own thinking and encourage active, verbal engagement of a task. Verbal responses generated by the child (versus didactic recitation) are particularly important in fostering school-related abilities. The effectiveness of specific parental teaching strategies appears to be related to the nature of the problem-solving or learning situation and to the child's developmental level. Parental contributions to children's reading skills are both indirect and direct, including the provision of reading and writing materials, parents' own reading habits, restrictions on the amount of television viewing, and actual reading to the child. Early literacy experiences are embedded within the routine of social interactions of a family, and generally are not pursued as isolated events for the sake of teaching or emphasizing literacy.

E. Affective Relationship

The affective quality of mother-child relationships has been found to be associated with infant and preschool children's cognitive functioning in many studies. Attentive, warm, and non-restrictive maternal behaviors foster the intellectual development of young children (for a review, see Belsky, 1981). Research on mother-infant attachment, for instance, indicates that children who are securely attached as infants subsequently approach cognitive tasks in

ways conducive to cognitive development (for a review, see Bretherton, 1985). Compared to less securely attached infants, the problem-solving style of securely attached infants is characterized by more curiosity, persistence, and enthusiasm, and less frustration.

Little research has been carried out to determine whether the affective relationship between mother and child is also related to children's school experiences. An analysis using the Stanford study data found the affective quality of the mother-child relationship when children were 4 years of age to be strongly correlated with school readiness at age 5 and 6, and with school achievement at age 12 (Estrada, Arsenio, Hess, & Holloway, 1987). Socioeconomic status and maternal IQ did not contribute to the relationship between mother-child affective ties and children's school-related abilities. The emotional quality of the mother-child relationship was measured with rating scales that assessed responsiveness, flexibility, warm concern, acceptance, emotional displays of affect, and punitiveness.

Results of the Estrada et al. study suggest that the affective relationship influences children's cognitive development in three ways. First, the emotional quality of mother-child relations appears to affect parents' tendency to engage and support children in solving problems. It also may affect children's social competence and, consequently, the flow of information between children and adults, including the ability to elicit and accept assistance from adults on tasks. Third, the affective relationship may influence children's exploratory tendencies; there may be more willingness to approach and persist in problem-solving tasks. A positive affective relationship between parent and child in the preschool years "may function much like secure attachment in infancy by providing a stable emotional base from which children can explore the world" (Estrada et al., 1987, p. 214).

Summary

Although the affective quality of mother-child relationships has been found to be associated with infant and preschool children's cognitive functioning, little research has been done on links between parent-child affect and school-related outcomes in older children. Existing research points to a relationship between mother-child relationship affect (e.g. maternal responsiveness, flexibility, acceptance, warm concern) during the preschool period and children's school-related skills at ages 5, 6, and 12 years.

F. Control and Discipline Strategies

The child-rearing dimension of "restrictive versus permissive" relations with children has been examined extensively in socialization research for nearly 50 years (Baldwin, 1949; Becker, 1964). Important effects of parents' socialization practices on children have been found by combining information from the child-rearing dimensions of control (restrictive versus permissive) and level of affect. The influential research of Baumrind (1971, 1973), for instance, has established that children of parents who tended to exhibit an authoritative parenting style (firm guidance within a warm, supportive relationship) were more socially competent than children of parents who exhibited a permissive or authoritarian style of parenting.

Parents' child-rearing control strategies have been studied largely in relation to children's social development. However, recent research indicates a link between mothers' directiveness and children's intellectual outcomes. Specifically, mothers' use of direct control tactics in teaching and disciplinary situations with 4-year-old children was found to be

negatively related to children's school-related abilities at 4, 5/6, and 12 years of age in an analysis of the Stanford study sample by Hess and McDevitt (1984).

Measures of mothers' intervention tactics were based on interview and observational data, and included (1) appeals to maternal authority (demanding child compliance without offering rule or reason), (2) appeals to consequences (telling child about the consequences of the child's action, excluding punishment), (3) maternal requests, commands, or questions that invite children to generate verbal responses on their own, and (4) direct commands that call for a verbal or nonverbal response (e.g. "Say it"). Children's verbal mental ability was measured at age 4, indices of school readiness were assessed at age 5/6, and scholastic aptitude in mathematics and vocabulary was measured at age 12. Direct control tactics of mothers were not induced by children's difficulties during problem-solving tasks.

Mothers' use of direct control strategies was modestly correlated with mothers' intelligence, socioeconomic status, and marital status, but an examination using partial correlations did not substantially alter the overall pattern of association between maternal control tactics and children's achievement.

Girls appeared to be influenced by maternal directiveness more than boys. At all three ages, girls' school achievement was negatively associated with direct control techniques; correlations for boys were in the same direction but none was significant. Mothers used direct teaching tactics and authority-based disciplinary appeals more with girls than with boys, but mean score differences were not statistically significant.

In a correlational study by Strom, Hathaway, and Slaughter (1981) involving 60 racially mixed middle-class mothers and their 3- to 6-year-old

children, mothers who had the least need to control their children's behaviors had children who scored higher on the McCarthy Scales of Children's Abilities. Lower levels of maternal control were positively correlated with all subscales of the McCarthy Scales, including the measure's General Cognitive Index which indicates overall cognitive functioning. Maternal control was assessed with an attitudinal measure (Parent as a Teacher inventory) that taps parents' standards for evaluating the importance of various aspects of their 3- to 8-year-old children's behaviors and their value preferences concerning child behavior. The control subscale assesses such attitudes as the acceptance of alternatives for child behavior, willingness to share dominance and decision-making, and extent to which disagreement, spontaneity, and privacy are allowed.

Three routes by which parental dominance may have a negative effect on children's cognitive development have been suggested by Hess and McDevitt (1984). First, parental control directs the child's attention to the competence and knowledge differential between the parent and child rather than to the task-specific elements of the exchange. Emphasis on the parent's superior command of knowledge ("You are supposed to put the blocks there. No, that's not right...") may inhibit the child from attending to elements of a problem-solving situation. Second, Hess and McDevitt suggest parental dominance discourages the child from being an active participant in problem-solving situations. Children are likely to assume a more active role in directing their own behavior if parents encourage their involvement in planning and monitoring task progress (e.g. "How are these blocks alike?"), for instance, than if parents offer a series of directives (e.g. "I want you to put the tall ones together and the short ones together"). Third, direct control strategies may influence a child's self-appraisals, including attributions about the source of competence and the experience of success

itself. Hess and McDevitt note that adults who give children complete problem-solving information implicitly suggest that the capability to solve such problems belongs primarily to the adult.

Summary

There is a long tradition of research on parents' control strategies in relation to children's social development, but considerably less is known about links between parental control and school-related outcomes. Available data indicate that mothers' use of direct control tactics in both teaching and disciplinary situations with 4-year-old children is negatively associated with children's school readiness at ages 4 and 5/6, and with school achievement at age 12.

III. STRENGTHENING PARENTAL CONTRIBUTIONS

The research presented in Section II provides general content parameters of parent beliefs and behaviors that warrant emphasis in an educational support program aimed at strengthening parents' competence in preparing their children for school. It offers the beginnings of an empirical understanding of "best practices" in early parenting relative to children's school performance (see Section IV). The information does not necessarily depict reality, however, and it provides no insight into how to reach parents with information about their role in facilitating their children school success.

A. The Realities of Parent-Child Interaction and Approaches to Readiness

This section presents descriptive information on the quality of relations between parents and young children surrounding the development of school-related abilities. Such information is necessary for (a) generating a crude indicator of the extent of discrepancy between desired and actual practices, and (b) understanding the context in which information aimed at parents would be introduced and received. Information on the quality of parenting is a first, global step toward implementation of the educational and human service principle of "beginning where the client is."

Two areas are examined: the quantity and nature of interactions between parents and their young children, and how parents prepare their children for entry into school.

Existing Parental Practices

In the past two decades, diverse sectors of American society have demonstrated intense and growing concern about the quality of parent-child relationships, especially in the child's early years. Changing demographic characteristics of families and communities have contributed to widespread interest in the nature and consequences of eroding sources of help for parents with young children. A recent policy analysis, for example, argued that a "parenting deficit" in America today is more pressing than budget and trade deficits (Mattox, 1991). Similarly, after three years of hundreds of interviews with parents and children throughout the country, a journalist concluded that a vast reduction in the amount of family time ("I'll play with you tomorrow") is dramatically changing the function of families (Loux, 1990).

These portrayals are consistent with Coleman's (1987) observation that over the past 25 years there has been extensive erosion of social capital within families and communities for the proper rearing of young children. In the family, social capital includes the presence of adults and the range of parent-child exchanges about academic, social, and personal matters. In the community, social capital involves norms of social control, adult-sponsored youth organizations, and informal relations between adults and children.

Time use studies of the University of Michigan's Institute for Social Research indicate that watching television dominates America's family time together. A relatively small amount of time is spent by parents and children jointly engaged in reading, conversing or playing. Data from the 1975-76 time allocation study indicate that only about 20% of the time that adults allocated to children was primarily instructional, including time spent helping/teaching, reading/listening to, or playing with children as the primary activity (Hill, 1985). A 1981-82 panel follow-up study of this sample found that children between the ages of 3 and 5 years were reading or being read to 7 minutes per day (both during the week and on the weekend). By contrast, 3- to 5-year-old children watched television 1 hour and 51 minutes on a typical day during the week, and 2 hours and 2 minutes a day on the weekend. Art activities occupied 5 minutes a day during the week and 4 minutes a day on the weekend (Timmer, Eccles, & O'Brien, 1985). Working mothers averaged 11 minutes a day in quality time activities with their children during the week, and 30 minutes a day on weekends. Mothers not employed in the labor force spent 30 minutes each day during the week with their child in quality time activities and 36 minutes each day on weekends. Maternal education and not employment, however, was found to be associated with school achievement (Eccles, O'Brien, & Timmer, 1985-86).

College-educated parents have been found to spend more time reading to their children and to watch less television than parents with lesser amounts of formal education. Also, the amount of time parents engage in television viewing has been found to be a strong predictor of the amount of time children spend watching television. Children whose mothers are in the labor market have been found to watch less television than children of mothers who are full-time homemakers (Timmer et al., 1985; Eccles et al., 1985-86).

In contrast with the relatively small amounts of high-quality parent-child interactional time uncovered in time use studies, there have been reports of parents placing inappropriate levels of achievement pressure on young children (Elkind, 1981). One form of this tendency is for parents to enroll preschool children in educational programs that emphasize the acceleration of skill and knowledge acquisition. Educators refer to this practice as the "hothousing" of young children (Sigel, 1987). Data are not available on the prevalence of this practice, including information about differences by socioeconomic status. There is some indication the pattern is most pronounced among middle-class families (Sigel, 1987).

Conventional wisdom holds that children from families of low socioeconomic status enter school having had insufficient parental support for developing school-related abilities. Early research, for instance, pointed to marked differences between middle-class and working-class mothers regarding teaching styles, verbal exchanges with child, and attitudes toward schooling that were associated with children's intellectual skills and school performance (Hess & Shipman, 1965; Hess et al., 1969).

More recent research on home environments suggests there is variability within a given socioeconomic group regarding the provision of stimulating experiences for children. For example, ethnographic studies of the past decade point to differences in the extent to which rich literacy environments

are provided across families of limited income and formal education (Heath, 1983; Teale, 1986). Teale's (1986) observational study of home literacy experiences of preschool children from low-income families revealed that every child was exposed to some form of literacy experience per day, but the variability across children and homes was considerable in terms of number of literacy events per hour (from .34 to 4.06) and number of minutes per hour (from 3.09 to 34.72). While environmental print (product labels, signs) was available in every home and community, there was a range across homes in the frequency with which children had an opportunity to observe reading and writing going on around them as well as directly engage in reading and writing themselves.

In spite of these variations, the low-income families were relatively consistent in infrequently engaging the children in storybook reading (Teale, 1986). One child, for instance, was involved in book reading with an adult on three occasions in the course of 70 hours of observation over a period of almost two years. Similarly, in a study of three young children in an urban, working-class community, Miller et al. (1986) found that reading was not as frequent or pervasive as reports of reading in middle-class families. Yet Miller et al. found the basic structure of the reading cycle was similar to what has been described for middle-class families (Ninio & Bruner, 1978, see above).

Preparing Children for School

Surprisingly little is known about how parents prepare their children for school. The crucial questions here pertain to parents' perceptions of the demands of schools, the abilities and skills parents believe children should

acquire prior to school entry, and how parents prepare their child for, and determine the likelihood of their success in, meeting school expectations.

Existing evidence suggests there is considerable diversity in parental conceptions of readiness and the types of school experiences parents envision for their child. An ethnographic study of conceptions of readiness in three Colorado schools uncovered markedly different interpretations of readiness across communities and their schools (Graue, in press; Eisenhart & Graue, 1990). Variations included images of readiness as environmentally- versus maturationally-based, and whether parents assumed the school would meet the needs of all incoming children regardless of ability. These interpretations tended to be shared by parents within a given community, pointing to the apparently strong influence of the local context on shared meanings of readiness. There also were differences across parents within a school area. For instance, readiness characteristics deemed important by parents often varied by child gender, and whether parents were interested in their child's success in school sports.

Socioeconomic status differences in how parents prepare their children for school have been found. In describing what school would be like, working-class African-American mothers of four-year-old children tended to emphasize classroom power structure and expectations for obedience while middle-class African-American mothers emphasized opportunities available in the classroom (Hess & Shipman, 1965; Hess et al., 1968). Consider the words of a mother of working-class background (from Hess & Shipman, 1965):

> Mind the teacher and do what she tells you to do. The first thing you have to do is be on time. Be nice and do not fight. If you are tardy or if you stay away from school your marks will go down. The teacher needs your full cooperation. She will have so many children she won't be able to pamper any youngster.

Here are words of preparation from a middle-class mother:

> First of all I would remind her that she was going to school to learn, that her teacher would take my place, and that she would be expected to follow instructions. Also that her time was to be spent mostly in the classroom with other children and that any questions or any problems that she might have she should consult with her teacher for assistance. To tell her anything else would probably be confusing for her at this age.

Evidence also points to socioeconomic status differences in parents' use of the readiness construct in describing children's development. Parents of four-year-olds from higher education-income groups referred to readiness ideas more often than working-class parents in McGillicuddy-DeLisi's (1982b) study of parental beliefs about child development. The study defined readiness as a necessary level of preparedness before children are capable of some experience, knowledge or action.

Clearly, some parents view intellectual skills as requisite to school success. One survey of the types of knowledge parents attempt to teach their preschool children found that the most commonly taught domains were names of colors and shapes, letters and numbers, parts of the body, and farm and zoo animals (Lange, 1979). However, the Eisenhart and Graue study in Colorado found a tendency for parents to place greater emphasis on the child's emotional maturity than on academic skills when making decisions about readiness for school. Counting and letter recognition were important, but the child's ability to separate from mother and cope with the frustrations of school social life were seen as "absolutely crucial to school success" (Eisenhart & Graue, 1990, p. 255).

A recent study of 436 parents (218 mothers, 218 fathers) of kindergarten children and 146 kindergarten teachers found a tendency for parents to place greater emphasis on intellectual skills than on social-emotional skills as important school readiness attributes (Knudsen-Lindauer & Harris, 1989). In response to the question, "When a child goes to kindergarten the most

important thing to know is...," both mothers and fathers overall ranked the following three skills and abilities as the most important in a list of 13 items: listening, self-confidence, and following directions. Reading and writing were ranked as the least important skills by mothers and fathers. With regard to the other 8 skill and ability items, mothers placed significantly higher priority than fathers on the child being confident, independent, and sitting still. Fathers ranked counting and reading significantly higher than did mothers.

Responses of kindergarten teachers as a group to the same question yielded priority rankings identical to both mothers and fathers for the three most important and two least important skills and abilities. Both mothers and fathers ranked counting, writing, and reading significantly higher than did teachers. Being independent and curious were ranked significantly higher by teachers than by mothers and fathers.

The study also examined expectations of curriculum emphases in kindergarten. Mothers, fathers, and teachers were in agreement that listening and confidence were the two most important developmental areas and skills to be emphasized. Teachers rated social skills as the third most important item to be emphasized, while mothers and fathers selected intellectual skills. Art appreciation and self-help skills were rated as the least important areas to be emphasized in kindergarten by all three groups.

The sample for the Knudsen-Lindauer and Harris study was drawn from two large school districts in a Western state, representing both urban and rural settings. The parent sample consisted of two-parent, intact families only, was largely white (nearly 80%), and represented primarily a middle-class and upper middle-class socioeconomic status group. About one-third of the mothers was employed outside the home.

A study of about 800 urban parents of children entering first grade found that parents viewed "follows rules" (e.g. minds teacher; raises hand; pays attention) as the most important conduct behavior of first graders (Alexander, Entwisle, Cadigan, & Pallas, 1987). While both highly educated and less educated parents emphasized rule following, highly educated parents were more likely than less educated parents to stress other conduct standards (respects others, respects self, good citizen, shows initiative). As a group, first-grade teachers also viewed "follows rules" as the most important conduct behavior of children, but also strongly emphasized "respects others," "does assignments," and "proper values" (e.g. being polite, respectful, helpful). Only slightly more than 30% of the parents and teachers were in agreement on standards of conduct, and parent-teacher congruence in behavior standards was not related to positive school adjustment in terms of report card marks and end-of-year test scores.

Summary

Recent, valid information on the quantity and nature of parent-child interaction is generally not available on representative populations. Time-use studies indicate that parents and preschool children are engaged in a relatively small amount of time that could be considered instructional. On the other hand, there are reports of parents placing high levels of achievement expectation and experiences on young children. Existing information suggests there is variation across lower-income homes regarding the provision of experiences that contribute to school-related abilities. The existing, limited amount of research information on how parents prepare their children for school suggests there are differences across parents regarding conceptions of readiness, and socioeconomic differences in how children are prepared for school. It appears that in general parents view entry-level

intellectual skills (e.g. names of colors and shapes) and the ability to follow rules as requisites to school success.

B. Strategies of Reaching Parents

One inexpensive strategy for providing information to parents is to disseminate printed materials. An example is age-paced child-rearing newsletters that are organized and distributed according to the child's birth date so that parents receive information each month about development and care of babies as old as their own. State offices of the Cooperative Extension Service issue age-paced newsletters for new parents (Cudaback et al., 1985) as do many commercial enterprises.

Printed materials keyed to parents' interests and disseminated on a regular basis have been found to be useful by parents but are unlikely to be effective in reaching parents of limited education and income. Evaluations of the effectiveness of age-paced newsletters point to encouraging results. In one self-report questionnaire study, new parents rated the newsletter as more useful than other sources of child-rearing information, including physicians and nurses, relatives, and other printed materials (Riley et al., in press). In 70% of households, two or more people read the newsletter. Most parents reported that reading the newsletters led them to change their child-rearing behaviors in five key areas (e.g. talk more to child). Parents in six risk categories reported significantly more positive behavior changes, suggesting that the newsletters were most beneficial to those who needed the information the most. Similar results were uncovered in an earlier study (Cudaback et al., 1985).

Parents with limited levels of education are unlikely users of printed materials. In the Riley et al. (in press) study described above, parents responding to the study differed from the general population of the sample pool in terms of education (higher) and family structure (fewer single parents). Also, a recent study of low-income Mexican immigrant and Mexican-American mothers of young children in Los Angeles found only a handful of respondents preferring to use printed materials as a child-rearing information source (Powell, et al., 1990). The most preferred information source was a professional or other respected authority person.

Studies indicate that for both mothers and fathers, people sources of child-rearing information such as professional and lay persons generally are found to be more useful than mass media sources such as books, magazines, and television talk shows (Crase, Carlson, & Kontos, 1981; Mullis & Mullis, 1983; Keopke & Williams, 1989). Informal social network sources such as friends and relatives have been rated as particularly influential (Hughes & Durio, 1983).

Even though people sources are used extensively by parents for child-rearing information, studies suggest that the use of popular literature, including child care advice books, has increased in the past several decades. Parents who are the most avid readers of advice literature have been found to be less educated, relatively isolated geographically from extended families, and concerned about doing the best thing for their children. First-time mothers are particularly active users of child-raring advice literature (Clarke-Stewart, 1978). Mothers have been found to use more information sources than fathers (Crase et at., 1981). Mothers tend to use information sources outside the home while fathers tend to use their wives as the initial information source, seeking other sources only if concerns or questions remain unaddressed (Peet, 1990).

While evaluations of parent education and support programs are limited in number and methodology (Powell, 1989; Weiss, 1988), the available evidence indicates that the magnitude of effects of parent programs is greater when programs are intensive. Meaningful support of and change in parents cannot be done on the cheap (Schorr, 1988). The parent-child relationship is far too complex to assume that brief encounters between a program and parents will dramatically alter or strengthen the pattern of parenting and ultimately improve child outcomes.

Findings of studies with both middle- and low-income populations support this lesson. In a review of outcome studies of 20 early intervention programs targeted at some aspect of family functioning, Heinicke, Beckwith, and Thompson (1988) concluded that more pervasive and sustained effects are likely to be realized when the intervention includes 11 or more contacts over at least a three-month period. The 20 programs included in the Heinicke et al. review were initiated sometime in the period from pregnancy to the first three months of the baby's life, and included a range of socioeconomic populations. Also pertinent to the question of program intensity and effects is research on brief interventions to enhance the parent-infant relationship in the first few days of the infant's life through use of the Brazelton Neonatal Behavioral Assessment. The tool is used in an effort to heighten parental awareness of newborn competencies and hopefully promote sensitive parenting and interactional synchrony. While a well-designed evaluation of this minor intervention indicated there were no effects on parent-child interaction (Belsky, 1985), other studies have found positive effects on maternal or paternal behavior (e.g. Anderson & Sawin, 1983; see Worobey & Brazelton, 1986).

The Mother-Child Home Program (Levenstein, 1977), Missouri's Parents as Teachers Program (Vartuli & Winter, 1989), the Home-Oriented Preschool Education program (Gotts, 1983), and the Syracuse University Family

Development Research Program (Lally, Mangione, & Honig, 1988) are illustrative of the effects of long-term programs that emphasize some of the parenting practices identified in Section II of this paper and have the development of school-related abilities as a goal. The Mother-Child Home Program, which emphasizes verbal interaction between mother and child, has been found to have positive effects on children's cognitive abilities and early school performance (Levenstein, O'Hara, & Madden, 1983). (A well-designed study of the program in Bermuda found no effects, however. See Scarr and McCartney, 1988.) An evaluation of the Parents as Teachers Program found increases in the child's intellectual development at age 3 (Pfannenstiel & Seltzer, 1989). The Home-Oriented Preschool Education program had a positive effect on home environments and children's academic performance in the early grades (Gotts, 1983, 1987). A follow-up study of the Syracuse program yielded strong positive program effects on parents and children, especially in the domain of child social deviance and functioning in the community (Lally et al., 1988).

There are indications in the literature that responsive parenting programs gear program content and methods to the interests and circumstances of parents (Halpern & Larner, 1988; Schorr, 1988). For instance, Gotts and Purnell (1986) attributed part of the success of the Home-Oriented Preschool Education program in Appalachia to the use of delivery systems that built upon rural family lifestyles, values, and resourcefulness.

Summary

Evaluations of age-paced newsletters for parents suggest that printed child-rearing material disseminated on a regular basis are useful to parents, bringing about self-reported changes in parenting behaviors. Printed materials are unlikely to be used by parents of limited education. Research

indicates the magnitude of program effects is greater when programs are intensive.

IV. PRACTICE IMPLICATIONS AND NEEDED RESEARCH DIRECTIONS

A. Implications for Practice

1. The early years of parenting (birth through kindergarten) are an appropriate target of initiatives designed to improve children's school success. There is compelling empirical support for the objective of supporting parents during the preschool period, as set forth in the the National Goals for Education. Parents' child-rearing beliefs and practices during the child's first 5 years of life are significantly and positively correlated to school readiness and school achievement.

2. Available information suggests that, in general, the amount of quality time parents spend with young children needs to be increased. It appears that overall parents spend small amounts of quality time with their children. There also are indications that, on the average, some parent contributions to school-related abilities are not maximized in families (i.e. parent enforcement of rules about amount of television viewing).

3. A range of interrelated parent behaviors and beliefs warrants attention in an educational program aimed at parents. Dimensions of parenting (e.g. reading to child) cannot be isolated from others (e.g. family literacy environment) and targeted in an educational program. Parent behaviors and attitudes are inextricably interwoven in routine, daily exchanges between

parent and child. There does not appear to be one parent factor that has the most significant influence on children's school-related abilities.

4. The following constellation of parent beliefs and behaviors is especially important to emphasize in an early parenting program aimed at improving children's school readiness:

- -- a view of human development as a complex process involving the child as an active contributor to development;
- -- realistic, in-depth understandings of the child's abilities and interests;
- -- asking children questions that stimulate thinking and promote verbal problem-solving (e.g. anticipate an outcome, create a plan), and avoiding closed-ended questions and didactic recitation;
- -- matching parental influence techniques (teaching style) to situational demands and the child's developmental level;
- -- recognizing and strengthening literacy experiences that occur within routine family interactions in the home and community (e.g. helping children establish an association between an object observed in the community to one read in a book);
- -- making reading and writing materials accessible, limiting television viewing time, visiting libraries and museums, parents reading for their own benefit;
- -- reading to children in a manner that actively involves the child through responses to parent questions about pictures and story figures;
- -- encouraging the child's active manipulation of a variety of stimulating objects;
- -- a parenting style of responsiveness, flexibility, warm concern, emotional displays of positive affect, acceptance of the child's ideas, interests and feelings.

5. Parents may benefit from information about the range of child abilities and skills associated with success in school. Research indicates parents tend

to emphasize a smaller set of school readiness skills (e.g. following rules) than do teachers. Parents, on average, also tend to view preparation for school as knowledge acquisition (e.g. knowing how to count) whereas the existing research points to the importance of skills that facilitate a child's knowledge acquisition (e.g. problem-solving).

6. The design and implementation (especially marketing) of a program aimed at parents should recognize that concepts of school readiness are not uniform, and appear to be influenced and vary by community norms and characteristics. Parents are likely to differ in their level of interest in and images of the readiness construct. Programs may need to approach readiness in a particularistic versus universal manner; locally-derived meanings of readiness are important to consider.

7. Programs aimed at parents need to reflect an appreciation of the cultural and socioeconomic bases of parent behavior and beliefs. The processes by which parents rear their children and seek information about child rearing are value-driven.

8. Because child characteristics are not the only influence on a child's success in school, it is important for programs aimed at parents to view children's school experiences as a dynamic process involving child, family, school, and community influences. Child characteristics and parental influences do not account for all of the variance in children's school achievement. It would be empirically and ethically inappropriate for programs to explicitly or implicitly indicate that full responsibility for a child's success in school rests with the child and his/her parents.

9. Printed materials that are keyed to parents' interests and disseminated on a regular basis may be useful in increasing parents' awareness of their contribution to school-related abilities, but are unlikely to produce significant change and to reach parents of lower socioeconomic status as a stand-alone intervention. The magnitude of parent program effects is greater when programs are intensive, including frequent personal contact with parents.

B. Needed Research Directions

Decisions about the design and implementation of public awareness initiatives aimed at strengthening parental contributions to children's early school experiences would be improved through the generation of new research knowledge. Three areas need particular attention.

First, research is needed on the quality and quantity of time parents spend with their children. Existing data on the uses of family time are dated. Fortunately, the National Household Education Survey sponsored by the U.S. Department of Education should provide useful indications of the types of home-based learning experiences that exist for children (e.g. reading, television viewing, museum visiting). It is important for analyses of family-based experiences regarding children's learning to employ broad conceptualizations of familial influences on children. As noted earlier in this paper, early literacy experiences are embedded within family social interactions, and thus may not be captured in assessments that utilize narrow images of instructional time involving parent and child. Readers are referred to Price and Hatano (1991) and Snow et al. (1991) for adaptations of and alternatives to the family as educator model of parental influences on children's learning.

Second, parents' views of the concept of school readiness require systematic investigation. Especially needed is research involving a range of populations regarding the types of experiences parents believe contribute to early school success, and the roles of family, school, community-based organizations, and children's peers to the development of achievement-related abilities. It appears from existing research that a good deal of diversity exists in parental and school concepts of readiness, but little is known about the characteristics and consequences of various beliefs about what children need to function well in school.

Third, evaluation research is needed on the effects of community-based public awareness initiatives aimed at parents surrounding their children's education. As described earlier in this review, it is unlikely that messages transmitted to parents via printed forms or other mass media will alter significantly existing patterns of parental beliefs and practices surrounding early learning. Public awareness campaign messages may interact with other formal and informal support systems for parenting, however; a parent may seek out other parenting resources in the community, for example, in response to a bulletin board display about the importance of adults reading to young children. research is needed, then on how parents respond to various types of public awareness campaign messages about family contributions to children's school success.

References

Alexander, K. L., Entwisle, D. R., Cadigan, D., & Pallas, A. (1987). Getting ready for first grade: Standards of deportment in home and school. Social Forces, 66, 57-84.

Anderson, C. J., & Sawin, D. B. (1983). Enhancing responsiveness in mother-infant interaction. Infant Behavior and Development, 6, 361-368.

Baldwin, A.L. (1949). The effect of home environment on nursery school behavior. Child Development, 20, 49-62.

Baumrind, D. (1971). Current patterns of parental authority. Developmental Psychology Monograph, 4 (1, pt 2).

Baumrind, D. (1973). The development of instrumental competence through socialization. In A.D. Pick (Ed.), Minnesota symposium on child psychology, Vol. 7. Minneapolis, MN: University of Minnesota Press.

Becker, W. C. (1964). Consequences of different kinds of parental discipline. In M. L. Hoffman & L. W. Hoffman (Eds.), Review of child development research, Vol. 1. New York: Russell Sage.

Bee, H. L., Barnard, K. E., Eyres, S. J., Gray, C. A., Hammond, M. A., Spietz, L. A., Snyder, C., & Clark, B. (1982). Prediction of IQ and language skills from perinatal status, child performance, family characteristics, and mother-infant interaction. Child Development, 53, 1334-1356.

Bell, R. Q., & Harper, L. V. (1977). Child effects on adults. Hillsdale, NJ: Erlbaum.

Belsky, J. (1981). Early human experience: A family perspective. Developmental Psychology, 17, 3-23.

Belsky, J. (1985). Experimenting with the family in the newborn period. Child Development, 56, 407-414.

Bradley, R. H., & Caldwell, B. M. (1976). The relation of infants' home environments to mental test performances at fifty-four months: A follow-up study. Child Development, 47, 1172-1174.

Bradley, R. H., & Caldwell, B. M. (1984). The relation of infants' home environments to achievement test performance in first grade: A follow-up study. Child Development, 55, 803-809.

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. Monographs of the Society for Research in Child Development, 50(1-2, Serial No. 209).

Briggs, C., & Elkind, D. (1977). Characteristics of early readers. Perceptual and Motor Skills, 44, 1231-1237.

Cadigan, D. K., Entwisle, D. R., Alexander, D., & Pallas, A. M. (1988). First grade retention among low achieving students: A search for significant predictors. Merrill-Palmer Quarterly, 34, 71-88.

Chandler, J., Argyris, D., Barnes, W. S., Goodman, I F., & Snow, C. E. (1986). Parents as teachers: Observations of low-income parents and children in a homework-like task. In B. B. Schieffelin & P. Gilmore (Eds.), The acquisition of literacy: Ethnographic perspectives (pp. 171-187). Norwood, NJ: Ablex.

Clark, M. M. (1976). Young fluent readers: What can they teach us? London: Heinemann Educational Books.

Clarke-Stewart, K. A. (1978). Popular primers for parents. American Psychologist, 359-359.

Clarke-Stewart, K. A. (1988). Parents' effects on children's development: A decade of progress? Journal of Applied Developmental Psychology, 9, 41-84.

Clarke-Stewart, K. A., & Apfel, N. (1979). Evaluating parental effects on child development. In L. Shulman (Ed.), Review of research in education (Vol. 6). Itasca, IL: F. E. Peacock.

Coleman, J. S. (1987). Families and schools. Educational Researcher, 16, 32-38.

Cotler, S., & Shoemaker, D. J. (1969). The accuracy of mothers' reports. Journal of Genetic Psychology, 114, 97-107.

Crase, S. J., Carlson, C., & Kontos, S. (1981). Parent education needs and sources as perceived by parents. Home Economics Research Journal, 9, 221-231.

Cudaback, D., Darden, C., Nelson, P., O'Brien, S., Pinsky, D., & Wiggins, E. (1985). Becoming successful parents: Can age-paced newsletters help? Family Relations, 34, 271-275.

Deutsch, C. P. (1973). Social class and child development. In B. M. Caldwell & H. N. Ricciuti (Eds.), Child Development research, Vol. 3 (pp. 233-282). Chicago: University of Chicago Press.

Diamond, K. (1987). Predicting school problems from preschool developmental screening: A four-year follow-up of the Revised Denver Developmental Screening Test and the role of parent report. Journal of the Division for Early Childhood, 11, 247-253.

Dix, T., & Grusec, J. E. (1983). Parental influence techniques: An attributional analysis. Child Development, 54, 645-652.

Dix, T., Ruble, D. N., Grusec, J. E., & Nixon, S. (1986). Social cognition in parents: Inferential and affective reactions to children of three age levels. Child Development, 57, 879-894.

Durkin, D. (1966). Children who read early. New York: Teachers College Press.

Eccles, J. L., O'Brien, K., & Timmer, S. G. (1985-86). How families use time. ISR Newsletter, University of Michigan Institute for Social Research, 3-4.

Eisenhart, M. A., & Graue, M. E. (1990). Socially constructed readiness for school. Qualitative Studies in Education, 3, 253-269.

Elardo, R., Bradley, R., & Caldwell, B. (1975). The relation of infants' home environments to mental test performance from six to thirty-six months: A longitudinal analysis. Child Development, 46, 71-76.

Elkind, D. (1981). The hurried child: Growing up too fast, too soon. Reading, MA: Addison Wesley.

Entwisle, D. R., & Hayduk, L. A. (1978). Too great expectations: The academic outlook of young children. Baltimore: Johns Hopkins University Press.

Entwisle, D. R., & Hayduk, L. A. (1981). Academic expectations and the school attainment of young children. Sociology of Education, 54, 34-50.

Entwisle, D. R., & Hayduk, L. A. (1982). Early schooling. Baltimore: Johns Hopkins University.

Entwisle, D. R., Alexander, K. L., Pallas, A. M., & Cadigan, D. A. (1987). The emergent academic self-image of first graders: Its response to social structure. Child Development, 58, 1190-1206.

Estrada, P. Arsenio, W. F., Hess, R. D., & Holloway, S. D. (1987). Affective quality of the mother-child relationship: Longitudinal consequences for children's school-relevant cognitive functioning. Developmental Psychology, 23, 210-215.

Flood, J. E. (1977). Parental styles in reading episodes with young children. Reading Teacher, 30, 864-867.

Goldenberg, C. N. (1989). Parents' effects on academic grouping for reading: Three case studies. American Educational Research Journal, 26, 329-352.

Goodlad, J. I. (1984). A place called school: Prospects for the future. New York: McGraw Hill.

Goodnow, J. J. (1984). Parents' ideas about parenting and development: A review of issues and recent work. In M. E. Lamb, A. L. Brown, & B. Rogoff (Eds.), Advances in Developmental Psychology, Vol. 3 (pp. 193-242). Hillsdale, NJ: Erlbaum.

Gandara, P., Keogh, B. K., & Yoshoika-Maxwell, B. (1980). Predicting academic performance of Anglo and Mexican-American kindergarten children. Psychology in the Schools, 17, 174-177.

Gotts, E. E. (1983). Home-based early intervention. In A. W. Childs & G. B. Melton (Eds.), Rural psychology (pp. 337-358). New York: Plenum.

Gotts, E. E. (1987). Parent training, home environment, and early childhood development: A long-term follow-up study. Early Child Development and Care, 27, 359-372.

Gotts, E. E. (1989). HOPE, Preschool to Graduation: Contributions to Parenting and School-Family Relations and Practice. Report to the Office of Educational Research and Improvement, U. S. Department of Education. Charleston, WV: Applachian Educational Laboratory, Inc.

Gotts, E. F., & Purnell, R. F. (1986). Families and schools in rural Appalachia. American Journal of Community Psychology, 14, 499-519.

Graue, M. E. (in press). Meanings of readiness and the kindergarten experience. In S. Kessler & B. Swadener (Eds.), Reconceptualizing early childhood education.

Graue, M. E., & Shepard, L. A. (1989). Predictive validity of the Gesell School Readiness Tests. Early Childhood Research Quarterly, 4, 303-315.

Greaney, V. (1986) Parental influences on reading. The Reading Teacher, 39, 813-818.

Halpern, R., & Larner, M. (1988). The design of family support programs in high-risk communities: Lessons from the Child Survival/Fair Start initiative. In D. R. Powell (Ed.), Parent education as early childhood intervention (pp. 181-207). Norwood, NJ: Ablex.

Hansen, H. S. (1969). The impact of the home literacy environment on reading attitude. Elementary English, 46, 17-24.

Heath, S. B. (1982). What no bedtime story means: Narrative skills at home and school. Language in Society, 11, 49-76.

Heath, S. B. (1983). Ways with words: Language, life, and work in communities and classrooms. New York: Cambridge University Press.

Heinecke, C. M., Beckwith, L., & Thompson, A. (1988). Early intervention in the family system: A framework and review. Infant Mental Health Journal, 9, 111-141.

Hess, R. D. (1970). Social class and ethnic influences on socialization. In Carmichael's manual of child psychology, Vol. 2. New York: Wiley.

Hess, R. D., Kashiwagi, K., Azuma, H., Price, G. G., & Dickson, W. P. (1980). Maternal expectations for mastery of developmental tasks in Japan and the United States. International Journal of Psychology, 15, 259-271.

Hess, R. D., & Shipman, V. (1965). Early experience and the socialization of cognitive modes in children. Child Development, 36, 869-886.

Hess, R. D., Shipman, V. C., Brophy, J. E., & Bear, R. M. (1968). The cognitive environments of urban preschool children. Chicago: University of Chicago Graduate School of Education.

Hess, R. D., Shipman, V. C., Brophy, J. E., & Bear, R. M. (1969). The cognitive environments of urban preschool children: Follow-up phase. Chicago: University of Chicago Graduate School of Education.

Hess, R. D., Holloway, S. D., Dickson, W. P., & Price, G. G. (1984). Maternal variables as predictors of children's school readiness and later

achievement in vocabulary and mathematics in sixth grade. Child Development, 55, 1902-1912.

Hess, R. D., & McDevitt, T. M. (1984). Some cognitive consequences of maternal intervention techniques: A longitudinal study. Child Development, 55, 2017-2030.

Hess, R. D., & Holloway, S. D. (1984). Family and school as educational institutions. In R. Parke (Ed.), Review of Child Development Research: The Family (Vol. 7, pp. 179-222). Chicago: University of Chicago Press.

Hess, R. D., Azuma, H., Kashiwagi, K., & Holloway, S. D. (1987). Cultural variations in socialization for school achievement: Contrasts between Japan and the United States. Journal of Applied Developmental Psychology, 8, 421-440.

Hughes, R., & Durio, J. G. (1983). Patterns of child care information seeking by families. Family Relations, 32, 203-212.

Hunt, J. McV. (1961). Intelligence and experience. New York: Ronald.

Hunt, J. McV. (1966). Toward a theory of guided learning in development. In R. J. Ojemann & K. Pritchett (Eds.), Giving emphasis to guided learning (pp. 98-160). Cleveland, OH: Educational Research Council.

Hunt, J. McV., & Paraskevopoulos, J. (1980). Children's psychological development as a function of the inaccuracy of their mothers' knowledge of their abilities. The Journal of Genetic Psychology, 136, 285-298.

Hymes, J. (1968). Teaching the child under six. Columbus, OH: Merrill.

Johnson, J. E., & Martin, C. (1983, October). Family environments and kindergarten children's academic knowledge. Paper presented at the meeting of the Northeastern Educational Research Association, Ellenville, NY.

Johnson, J. E., & McGillicuddy-DeLisi, A. (1983). Family environment factors and children's knowledge of rules and conventions. Child Development, 54, 218-226.

Kagan, S. L. (1990). Readiness 2000: Rethinking rhetoric and responsibility. Phi Delta Kappa, 272-279.

Kagan, S. L., Powell, D. R., Weissbourd, B., & Zigler, E. (1987). America's family support programs: Perspectives and prospects. New Haven, CT: Yale University Press.

Kahl, J. A. (1953). Educational and occupational aspirations of "common man" boys. Harvard Educational Review, 33, 186-203.

Klerman, L. V. (1988). School absence -- A health perspective. The Pediatric Clinics of North America, 35, 1253-1269.

Knudsen-Lindauer, S. L., & Harris, K. (1989). Priorities for kindergarten curricula: Views of parents and teachers. Journal of Research in Childhood Education, 4, 51-61.

Koepke, J., & Williams, C. (1989). Child-rearing information: Resources parents use. Family Relations, 38, 462-465.

Kohn, M. L. (1959). Social class and the exercise of parental authority. American Sociological Review, 24, 352-366.

Kohn, M. L. (1977). Class and conformity: A study in values. Chicago: University of Chicago Press.

Lally, J. R., Mangione, P. L., & Honig, A. S. (1988). The Syracuse University Family Development Research Program: Long-range impact of an early intervention with low-income children and their families. In D. R. Powell (Ed.), Parent education as early childhood intervention (pp. 79-104). Norwood, NJ: Ablex.

Lange, G. (1979, March). What parents teach and expect their children to remember prior to formal schooling. Paper presented at the biennial

meeting of the Society for Research in Child Development. San Francisco, CA.

Laosa, L. M. (1980a). Maternal teaching strategies in Chicano and Anglo-American families: The influence of culture and education on maternal behavior. Child Development, 51, 759-765.

Laosa, L. M. (1980b). Measures for the study of maternal teaching strategies. Applied Psychological Measurement, 4, 355-366.

Laosa, L. M. (1981). Maternal behavior: Sociocultural diversity in modes of family interaction. In R. W. Henderson (Ed.), Parent-child interaction: Theory, research, and prospects (pp. 125-167). New York: Academic Press.

Laosa, L. M. (1982). School, occupation, culture, and family: The impact of parental schooling on the parent-child relationship. Journal of Educational Psychology, 74, 791-827.

Laosa, L. M. (1990). Population generalizability, cultural sensitivity, and ethical dilemmas. In C. B. Fisher & W. W. Tyron (Eds.), Ethics in applied developmental psychology: Emerging issues in an emerging field (pp. 227-251). Norwood, NJ: Ablex.

Leichter, J. H. (1984). Families as environments for literacy. In H. Goelman, A. Oberg, & F. Smith (Eds), Awakening to literacy (pp. 38-50). Portsmouth, NH: Heinemann Educational Books.

Levenstein, P. (1977). The Mother-Child Home Program. In M. C. Day & R. K. Parker (Eds.). The preschool in action (pp. 27-49). Boston: Allyn & Bacon.

Levenstein, P., O'Hara, J., & Madden, J. (1983). The Mother Child Home Program of the Verbal Interaction Project. In Consortium for Longitudinal Studies (Ed.). As the twig is bent: Lasting effects of preschool programs (pp. 237-263). Hillsdale, NJ: Erlbaum.

Loux, R. (1991). Childhood's future. Boston: Houghton Mifflin.

Marjoribanks, K. (1979). Families and their learning environments. Boston: Routledge & Kegan Paul.

Mattox, W. R. (1991). The parent trap. Policy Review, 55, 6-13.

McCall, R. (1981). Nature-nurture and the two realms of development: A proposed integration with respect to mental development. Child Development, 52, 1-12.

McGillicuddy-DeLisi, A. V. (1982a). Parental beliefs about developmental processes. Human Development, 25, 192-200.

McGillicuddy-DeLisi, A. V. (1982b). The relationship between parents' beliefs about development and family constellation, socioeconomic status, and parents' teaching strategies. In L. M. Laosa & I. E. Siegel (Eds.), Families as learning environments for children (pp. 261-299). New York: Plenum.

McGillicuddy-DeLisi, A. V. (1985). The relationship between parental beliefs and children's cognitive level. In I. E. Sigel (Ed.), Parental belief systems (pp. 7-24). Hillsdale, NJ: Erlbaum.

Meisels, S. J. (1984). Prediction, prevention and developmental screening in the EPSDT program. In H. W. Stevenson & A. E. Siegel (Eds.), Child development research and social policy (pp. 267-317). Chicago: University of Chicago Press.

Meisels, S. J. (1987). Uses and abuses of developmental screening and school readiness testing. Young Children, 42, 4-6, 68-73.

Mehan, H. (1979). Learning lessons. Cambridge, MA: Harvard University Press.

Milner, E. (1951). A study of the relationship between reading readiness in grade one school children and patterns of parent-child interaction. Child Development, 22, 95-112.

Miller, P., Nemoianu, A., & DeJong, J. (1986). Early reading at home: Its practice and meanings in a working class community. In B. B. Schieffelin & P. Gilmore (Eds.), The acquisition of literacy: Ethnographic perspectives (pp. 3-15). Norwood, NJ: Ablex.

Miller, S. A. (1986). Parents' beliefs about children's cognitive development. Child Development, 22, 276-284.

Miller, S. A. (1988). Parents' beliefs about children's cognitive abilities. Child Development, 59, 259-285.

Miller, S. A., Manhal, M., & Mee, L. L. (1991). Parental beliefs, parental accuracy, and children's cognitive performance: A search for causal relations. Developmental Psychology, 27, 267-276.

Miller, S. A., White, N., & Delgado, M. (1980). Adults' conceptions of children's cognitive abilities. Merrill-Palmer Quarterly, 26, 135-151.

Moon, C., & Wells, G. (1979). The influence of home on learning to read. Journal of Research in Reading, 2, 53-62.

Morrow, L. (1983). Home and school correlates of early interest in literature. Journal of Educational Research, 76, 221-230.

Mullis, A. K., & Mullis, R. L. (1983). Making parent education relevant. Family Perspectives, 17, 167-173.

National Association for the Education of Young Children (1990). Position statement on school readiness. Washington, DC: Author.

Ninio, A. (1980). Picture-book reading in mother-infant dyads belonging to two subgroups in Israel. Child Development, 51, 587-590.

Ninio, A. (1983). Joint book-reading as multiple vocabulary acquisition device. Developmental Psychology, 19, 445-451.

Ninio, A., & Bruner, J. (1978). The achievement and antecedents of labeling. Journal of Child Language, 5, 1-14.

Oakland, T. (1978). Predictive validity of readiness tests for middle and lower socioeconomic status Anglo, Black, and Mexican American children. Journal of Educational Psychology, 70, 574-582.

Pallas, A. M., Entwisle, D. R., Alexander, K. L., & Cadigan, D. (1987). Children who do exceptionally well in first grade. Sociology of Education, 60, 257-271.

Parke, R. D. (1978). Children's home environments: Social and cognitive effects. In I. Altman & J. F. Wohlwill (Eds.), Children and the environment. New York: Plenum.

Peet, S. H. (1990). Linkages among parental beliefs about development, attribution styles, parental patterns of information use, and child development. Doctoral dissertation, Purdue University, West Lafayette, IN.

Pellegrino, A. D., Brody, G. H., & Sigel, I. E. (1985). Parents' book-reading habits with their children. Journal of Educational Psychology, 77, 332-340.

Perry, D. G., & Perry, L. C. (1983). Social learning, causal attribution and moral internalization. In J. Bisanz, G. L. Bisanz, & R. Kail (Eds.). Learning in children: Progress in cognitive development research. New York: Springer-Verlag.

Pfannensteil, J. C., & Seltzer, D. A. (1989). New parents as teachers: Evaluation of an early parent education program. Early Childhood Research Quarterly, 4, 1-18.

Piaget, J. (1960). The psychology of intelligence. Patterson, NJ: Littlefield, Adams.

Powell, D. R. (1989). Families and early childhood programs. Washington, DC: National Association for the Education of Young Children.

Powell, D. R., Zambrana, R., & Silva-Palacios, V. (1990). Designing culturally responsive parent programs: A comparison of low-income Mexican and Mexican-American mothers' program preferences. Family Relations, 39, 298-304.

Powell, D. R., & Sigel, I. E. (in press). Searches for validity in the evaluation of young children and early childhood programs. In B. Spodek & O. Saracho, Yearbook in early childhood education, Vol. 2. New York: Teachers College Press.

Price, G. G. (1984). Mnemonic support and curriculum selection in teaching by mothers: A conjoint effort. Child Development, 55, 659-668.

Price, G. G., & Gillingham, M. G. (1985). Effects of mothers' overestimation and underestimations of their children's intellectual ability: A reanalysis of Hunt and Paraskevopoulos. The Journal of Genetic Psychology, 146, 477-481.

Price, G. G., & Hatano, G. (1991). Toward a taxonomy of the roles home environments play in the formation of educationally significant individual differences. In S. Silvern (Ed.), Advances in reading and language research, Vol. 5. Literacy through family, community, and school interaction (pp. 37-62). Greenwich, CT: JAI Press.

Price, G. G., Hess, R. D., & Dickson, W. P. (1981). Processes by which verbal-educational abilities are affected when mothers encourage preschool children to verbalize. Developmental Psychology, 17, 554-564.

Ramey, C., Mills, P., Campbell, R., & O'Brien, C. (1975). Infants' home environments: A comparison of high-risk families and families from general population. American Journal of Mental Deficiency, 80, 40-42.

Reynolds, A. J. (1989). A structural model of first-grade outcomes for an urban, low socioeconomic status, minority population. Journal of Educational Psychology, 81, 594-603.

Riley, D., Meinhardt, G., Nelson, C., Salisbury, M. J., & Winnett, T. (in press). How effective are age-paced newsletters for new parents? A replication and extension of earlier studies. Family Relations.

Rogoff, B. (1989). The joint socialization of development by young children and adults. In A. Gellatly, D. Rogers, & J. A. Sloboda (Eds.), Cognition and social worlds. Oxford: Oxford University Press.

Sattler, J. M., Feldman, J., & Bohanon, A. L. (1985). Parental estimates of children's receptive vocabulary. Psychology in the Schools, 22, 303-307.

Scarr, S., & McCartney, K. (1988). Far from home: An experimental evaluation of the Mother-Child Home Program in Bermuda. Child Development, 59, 531-543.

Schorr, L. B. (1988). Within our reach: Breaking the cycle of disadvantage. New York: Doubleday.

Scott-Jones, D. (1987). Mother-as-teacher in the families of high- and low-achieving low-income black first-graders. Journal of Negro Education, 56, 21-34.

Seginer, R. (1983). Parents' educational expectations and children's academic achievements: A literature review. Merrill-Palmer Quarterly, 29, 1-23.

Shepard, L. A., Graue, M. E., & Catto, S. F. (1989). Delayed entry into kindergarten and escalation of academic demands. Paper presented at the annual meeting of the American Educational Research Association, San Fransicso.

Shepard, L. A., & Smith, M. L. (1988). Escalating academic demand in kindergarten: Counterproductive policies. The Elementary School Journal, 89, 1325-145.

Siegel, L. (1981). Infant tests as predictors of cognitive and language development at two years. Child Development, 52, 545-557.

Sigel, I. E. (1970). The distancing hypothesis: A causal hypothesis for the acquisition of representational thought. In M. R. Jones (Ed.), Miami symposium on the prediction of behavior, 1968: Effects of early experience (pp. 99-188). Coral Gables, FL: University of Miami Press.

Sigel, I. E. (1982). The relationship between parents' distancing strategies and the child's cognitive behavior. In L. M. Laosa & I. E. Sigel (Eds.), Families as learning environments for children (pp. 47-86). New York: Plenum.

Sigel, I. E. (1987). Does hothousing rob children of their childhood? Early Childhood Research Quarterly, 2, 211-225.

Sinclair, J. M., & Coulthard, R. M. (1975). Toward an analysis of discourse. New York: Oxford University Press.

Smith, M. L., & Shepard, L. A. (1988). Kindergarten readiness and retention: A qualitative study of teachers' beliefs and practices. American Educational Research Journal, 25, 307-333.

Snow, C. E., Barnes, W. S., Chandler, J., Goodman, I. F., & Hemphill, L. (1991). Unfulfilled expectations: Home and school influences on literacy. Cambridge, MA: Harvard University Press.

Stevenson, H. W., Parker T., Wilkinson, A., Hegion, A., & Fish, E. (1976). Longitudinal study of individual differences in cognitive development and scholastic achievement. Journal of Educational Psychology, 68, 377-400.

Stevenson, H. W., & Newman, R. S. (1986). Long-term prediction of achievement and attitudes in mathematics and reading. Child Development, 57, 646-659.

Stipek, D. J. (1981). Children's perceptions of their own and their classmates' abilities. Journal of Educational Psychology, 73, 404-410.

Strom, R., Hathaway, C., & Slaughter, H. (1981). The correlation of maternal attitudes and preschool children's performance on the McCarthy Scales of Children's Abilities. Journal of Instructional Psychology, 8, 139-145.

Strom, R., & Hill, J. (1979). Childrearing expectations of Hopi and Navajo parents of preschoolers. Journal of Instructional Psychology, 6, 15-27.

Teale, W. H. (1984). Reading to young children: Its significance for literacy development. In H. Goelman, A. Oberg, & F. Smith (Eds.), Awakening to literacy (pp. 110-121). Portsmouth, NH: Heinemann Educational Books.

Teale, W. H. (1986). Home background and young children's literacy development. In W. H. Teale & E. Sulzby (Eds.), Emergent literacy: Writing and reading (pp. 173-206). Norwood, NJ: Ablex.

Timmer, S. G., Eccles, J., & O'Brien, K. (1985). How children use time. In F. T. Juster & F. P. Stafford (Eds.), Time, goods, and well-being (pp. 353-382). Ann Arbor, MI: Institute for Social Research, University of Michigan.

Van Doorninck, W. J., Caldwell, B. M., Wright, C., & Frankenburg, W. K. (1981). The relationship between twelve-month home stimulation and school achievement. Child Development, 52, 1080-1083.

Vartuli, S., & Winter, M. (1989). Parents as first teachers. In M. Fine (Ed.), Second handbook on parent education (pp. 99-117). New York: Academic Press.

Vygotsky, L. (1978). Mind in society. Cambridge, MA: Harvard University Press.

Wachs, T. D., & Gruen, G. E. (1982). Early experience and human development. New York: Plenum.

Walsh, D. J. (1989). Changes in kindergarten: Why here? Why now? Early Childhood Research Quarterly, 4, 377-391.

Weiss, H. B. (1988). Family support and education programs: Working through ecological theories of human development. In H. B. Weiss & F. H. Jacobs

(Eds.), Evaluating family programs (pp. 3-26). Hawthorne, NY: Aldine de Gruyter.

Wertsch, J. V., McNamee, G. D., McLane, J. G., & Budwig, N. A. (1980). The adult-child dyad as a problem-solving system. Child Development, 51, 1215-1221.

White, K. R. (1982). The relation between socioeconomic status and academic achievement. Psychological Bulletin, 91, 461-481.

White, R. W. (1959). Motivation reconsidered: The concept of competence. Psychological Review, 66, 297-323.

Worobey, J., & Brazelton, T. B. (1986). Experimenting with the family in the newborn period: A commentary. Child Development, 57, 1298-1300.